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Author:

Johnson, George

Title:

Electric lighting accounts

Place:

London

Date:

1904

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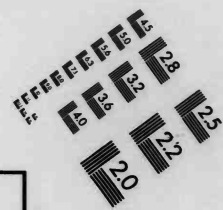


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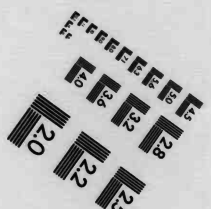
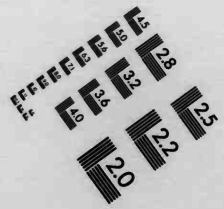
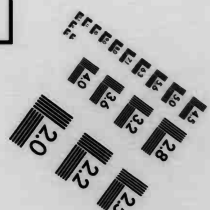
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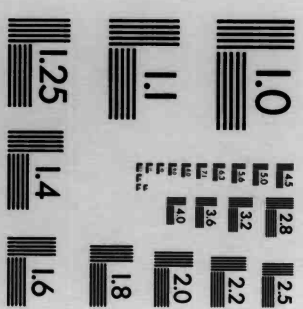
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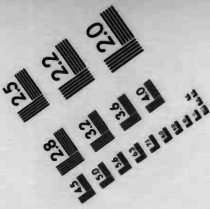
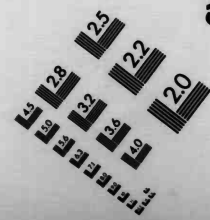
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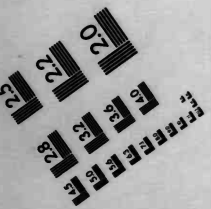
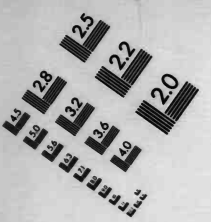
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VOL. XXIX.

ELECTRIC LIGHTING ACCOUNTS

BY

GEORGE JOHNSON, F.S.S., F.C.I.S., &C.

SECOND EDITION.

LONDON :

GEE & CO. (PUBLISHERS) LTD., 34 MOORGATE STREET, E.C.

1913

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EDITOR'S PREFACE.

THE object of the series of handbooks published under heading of THE ACCOUNTANTS' LIBRARY is to provide, at a reasonable price, detailed information as to the most approved methods of keeping accounts in relation to all the leading classes of industry whose books call for more or less specialised treatment. No such series has hitherto been attempted; but there exist, of course, numerous separate works dealing with the accounts of one particular class of undertaking. These separate works are, however, for the most part either too expensive, or too superficial to answer the purpose that is particularly aimed at by THE ACCOUNTANTS' LIBRARY, which is intended to supply the student with that specialised information which he may require, while at the same time affording to the trader, banker, or manufacturer who is not in a position to secure the fullest information for his purpose, knowledge which can hardly fail to be of the very greatest assistance to him in the correct keeping of his accounts, upon a system specially adapted to his requirements, and therefore involving a minimum expenditure of labour. It is expected that the series will also be found of material assistance to bookkeepers of all classes.

Without aiming at giving an exhaustive account of the manner in which each separate business is conducted, the technical points in connection with each industry will receive as much attention as is necessary in order fully to elucidate the system of accounts advocated, while each volume will be the work of one who has made that particular class of accounts

more or less a speciality. It is obvious, however, that to enable the necessary ground to be covered in the space available, it is incumbent to assume upon the part of the reader a certain knowledge of general bookkeeping. The extent of the knowledge assumed will vary according to the nature of the class of accounts considered. For example, in the volumes on "Bank Accounts" and "Shipping Accounts," a thorough acquaintance with ordinary double-entry bookkeeping is not unnaturally assumed; but in the case, for instance, of "Auctioneers' Accounts," and other similar volumes, such explanations are included as will enable the ordinarily intelligent reader fully to grasp the methods described even although his knowledge of bookkeeping may be of an elementary description. These explanations are, doubtless, superfluous as far as accountants are concerned, but are necessary to make the volumes of value to the majority of those specially engaged in these particular industries.

The whole series, comprising fifty-one volumes, forms a most valuable and complete library, dealing, at the hands of specialists, with practically every class of accounts, and illustrating the application of the theory of double-entry as described in general works on bookkeeping.

ELECTRIC LIGHTING ACCOUNTS.

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INTRODUCTION.

THE supply of electricity is carried out under three leading principles, viz. :—

- (1) By distribution to all classes of consumers under Provisional Orders.
- (2) By supply in bulk under private Acts to authorised undertakers and users.
- (3) By Licence for a limited period.

The Acts of Parliament governing the supply are the Electric Lighting Act, 1882 ; an Act to amend the Act of 1882, passed in 1888 ; and the Electric Lighting (Clauses) Act, 1899, which incorporates in one Act certain provisions usually contained in Provisional Orders. Under the Act of 1899 the form of a Provisional Order is much simplified. In 1909 a further Act was passed dealing with various matters.

Application may be made for a Provisional Order for the area of any Local Authority, or for several areas, if contiguous.

Authority to supply in bulk under what are termed Power Schemes, covering extensive areas, is obtained by private Act of Parliament, and is usually limited to the right of laying mains to supply authorised users—that is to say, undertakers under Provisional Orders, and Tramway Companies.

Licences are not now granted.

The procedure in applying for a Provisional Order depends upon whether the application is made by a Local Authority, company, or person.

In the first-named case, the application is made in pursuance of a resolution passed at a special meeting of the Local Authority, held after one month's previous notice of the same, and of the purpose thereof, has been given in the manner in which notices of such meetings of Local Authorities are usually given, and the Board of Trade require a certificate from the Secretary or Clerk, reciting copies of the notice and of the resolution, and also declaring that the notice was duly given and the resolution duly passed.

In the case of any other applicants, notice must be given to the Local Authority of the area sought to be supplied on or before the 1st July, and to anyone authorised to supply within the same area on or before the 1st November.

In all cases advertisements must be inserted in October or November (once in each of two consecutive weeks) in a paper published and circulated in the district, and once in the *London Gazette*, setting forth the objects of the application, description of proposed area, names of streets in which it is proposed that electric lines shall be laid down within a specified time, a list of streets not repairable by the Local Authority, railways and tramways proposed to be broken up, and the address of offices in London and in the area of supply where printed copies of the draft order may be obtained. Before the 30th November a copy of the advertisement, and map of the area, must be deposited with the Local Authority and Clerk of the Peace for the County. On or before the 21st December the application must be made by memorial to the Board of Trade, accompanied by a fee of £50 and six copies of the draft Provisional Order.

In the case of a Local Authority, a statement must be made as to the sums proposed to be expended, whether it is intended to raise a loan, rateable value of the district, amount of existing indebtedness and borrowing powers, and the amount of existing rates in the £.

In the case of other applicants, a statement must also be made as to the capital proposed to be expended, and how it is to be provided.

The consent of every Local Authority must be obtained; but the Board of Trade have power to dispense with it, if they consider that it has been unreasonably withheld.

Another method of obtaining a Provisional Order is by transfer; but this only applies to an Order obtained prior to 1899, as in that year the transfer clause, previously inserted, was no longer permitted, with the object of abolishing the traffic in transfers of Provisional Orders.

When the Board of Trade have granted the Provisional Order it is embodied in a Confirmation Bill, and passed through Parliament, a special report being made by the Board to Parliament in cases where the consent of the Local Authority is dispensed with. The order takes effect from the date of Royal Assent.

A Provisional Order is granted for forty-two years, or a shorter period. The Local Authority may purchase within six months of the expiration of such period, or within six months of the expiration of every following period of ten years.

It is frequently alleged that the electric lighting industry has been burdened with an excessive amount of grandmotherly legislation from its inception.

Parliamentary power being necessary to enable the suppliers of electricity to disturb the public thoroughfares, the Electric Lighting Act of 1882 was passed, but with conditions that, it is stated, practically prevented the provision of the necessary capital. At the time Mr. Joseph Chamberlain was

President of the Board of Trade, and under his influence as a strong municipaliser, terms, it is further stated, were inserted in the Act respecting the right of purchase of undertakings by Local Authorities, by which they could be acquired at the end of twenty-one years at their then value, and in the terms of Section 27 of the 1882 Act, provided that the value of such lands, buildings, works, materials, and plant shall be deemed to be their fair market value at the time of the purchase, due regard being had to the nature and then condition of such buildings, works, materials, and plant, and to the state of repair thereof, and the suitability of the same to the purposes of the undertaking, and where a part only of the undertaking is purchased, to any loss occasioned by severance; but without any addition in respect of compulsory purchase or of goodwill, or of any profits which may or might have been, or be made, from the undertaking, or of any similar considerations.

A Committee was formed consisting of leading promoters of the industry, under the presidency of Lord Thurlow, who succeeded, after a long struggle, in securing an important modification of the purchase terms under the Act passed in 1888, the period for the option of purchase being extended to forty-two years. During the currency of the terms of the 1882 Act, however, it is stated that the industry was seriously hampered, which afforded great advantages to the manufacturers in Germany and the United States.

In 1899 the Electric Lighting (Clauses) Act was passed, with the object of incorporating in one Act certain stipulations incorporated in Provisional Orders. Under this Act companies or persons acquiring Provisional Orders were prohibited from purchasing or acquiring the undertakings, or even associating themselves with any company or person supplying energy under any licence, Provisional Order, or special Act, except by the authority of Parliament.

The last Electric Lighting Act, that of 1909, removes some of the objections to previous legislation, and authorises arrangements for facilitating the business, which, it is stated, should have existed at the commencement, such as the modification of the powers of Local Authorities to object to the grant of Provisional Orders, and facility for the supply of electrical energy outside the specified areas in the schedules of the Orders. This Act also gives a monopoly to authorised undertakers, with certain exceptions.

It is an interesting fact that in numerous cases a supply of electricity has been given to towns by arrangement with the Local Authorities without statutory power.

In some cases, however, agreements have been made by companies with Local Authorities for the supply of electrical energy containing the stipulation that the purchase-price, in the event of purchase by the Local Authority, shall be that shown by the Capital Expenditure Account, plus a certain percentage thereof for goodwill, a financial proceeding (apart from other considerations) which is certainly not to the advantage of the community.

As several of the matters cursorily mentioned in this preface to the second edition arise from differences of opinion upon company *versus* municipal ownership, monopoly by ordinary limited liability and Parliamentary companies, and other matters too long and involved to discuss here, the writer expresses no opinion thereon.

ELECTRIC LIGHTING ACCOUNTS.

CHAPTER I.

INCOME AND EXPENDITURE.

THE revenue of an Electric Lighting Company is derived from--

- (1) The Sale of Current.
- (2) Hire or Rental of Meters, Motors, Fittings, &c.
- (3) Fees.
- (4) Sundry Sales.
- (5) Rents.
- (6) Investments.

The usual headings, to which the different descriptions of expenditure are allocated, will be seen in the Allocation Table subjoined. It should be a firm rule of the management that no expenditure can be incurred without the sanction of the board. A statement of proposed expenditure, say for every three months, should be submitted to the board for its sanction, upon the actual working of which either the Secretary or the Accountant should report to the board at the expiration of each period. The following is an illustration of such a statement.

THE WROXHAM ELECTRIC LIGHTING CO. LIM.
December 20th 1912. No. 3.

To THE DIRECTORS OF THE WROXHAM ELECTRIC LIGHTING CO.

I append particulars of my requirements for the Quarter ending 31st March 1903, and beg to apply for the authority of the Board to incur expenditure in respect thereof up to £475.

PARTICULARS OF REQUIREMENTS.		Amount
Quantity or Weight	Description	
		£ s d
100 Tons..	Coal @ 14/- per ton	70 0 0
1 Barrel.	Cylinder Oil @ 1/9 per gallon	3 10 0
1 Do. .	Crank Chamber Oil @ 1/6 per gallon ..	3 0 0
3 Cwt..	Coloured Waste @ 17/- per cwt.	2 11 0
1 Gross..	Sponge Cloths	0 8 0
	Engine Room Stores:—	
	Lamps, graphite, grease, packing, emery, polish, carbon brushes, gauge glasses, &c.	7 0 0
	Tools	2 0 0
	House Services (Materials)	20 0 0
	Water	5 0 0
	Cell Room Stores	3 0 0
	Wages.. .. .	173 0 0
	Salaries	100 0 0
	Rents, Rates, &c.	15 0 0
	Secretarial and Administration Expenses..	65 0 0
		<u>£469 9 0</u>

Date sanctioned, December 21st 1912.

Chairman of Board, J. BROWN.

J. ROBINSON, Secretary.

At the end of each quarter the Accountant reports upon the working of the estimate, giving briefly the heads and amount of expenditure authorised and actually incurred.

ALLOCATION TABLE—REVENUE.

DESCRIPTION	REFERENCE
A.—Generation.—	
Fuel Account (Coal or other Fuel, including dues, carriage, unloading, storing, and all expenses of placing the same on works)	A. 1.
Generation Stores (such as Engine room stores, oil, waste, &c.).. .. .	A. 2.
Water	A. 3.
Proportion of Salaries of Engineers, Superintendents, and Officers as certified by the Managing Director, Chairman, or Engineer	A. 4.
Generation Wages	A. 5.
Repairs and Maintenance of Buildings	A. 6.
Repairs and Maintenance of Engines, Boilers, &c. ..	A. 7.
Repairs and Maintenance of Dynamos, Alternators, Exciters, Balancers, and Boosters	A. 8.
Repairs and Maintenance of Machinery, including Condensers, Pumps, Steam, Water, and Exhaust Pipes and Appliances, Instruments, and Tools ..	A. 9.
Repairs and Maintenance of Accumulators and Accessories	A. 10.
Repairs and Maintenance of Station Lighting	A. 11.
B.—Distribution.—	
Proportion of Salaries of Superintendents and Officers, as certified by the Managing Director, Chairman, or Engineer	B. 1.
Distribution Wages (Linesmen, Fitters, Labourers, &c.) ..	B. 2.
Repairs and Maintenance of Mains of all classes ..	B. 3.
Repairs and Maintenance of Transformers, Meters, Switches, Fuses, and other Apparatus on consumers' premises	B. 4.
Repairs and Maintenance of Distribution Stations ..	B. 5.
Sundries	B. 6.
C.—Public Lamps.—	
Public Lamps Repairs	P.L. 1.
Public Lamps Renewals	P.L. 2.

The remainder of the Revenue Accounts are :—

D.—Royalties.—

i.e., Royalties payable for use of patents or patent processes.

E.—Rents, Rates, and Taxes.—

- (1) Rents Payable.
- (2) Rates and Taxes.

F.—Management Expenses.—

- (1) Directors' Remuneration.
- (2) Salaries of Managing Engineers, Secretary, Accountant, Clerks, and Messengers as certified by the Managing Director, Chairman, or Engineer.
- (3) Salaries and Commissions of Collectors.
- (4) Stationery and Printing.
- (5) General Establishment Charges.
- (6) Auditor's Fee.
- (7) Auditor appointed under the provisions of the Order.

G.—Law and Parliamentary Charges —

H.—Depreciation.—

- (1) Leasehold Works.
- (2) Buildings.
- (3) Plant, Machinery, &c.

I.—Special Charges.—

- (1) Insurances, Superannuation, &c.
- (2) Expenses for Certification of Meters.

The above titles agree with those in the Board of Trade prescribed form of Revenue Account.

The Capital Accounts are :—

DESCRIPTION.	REFERENCE
✓ Lands, including Law Charges incidental to acquisition ..	C. 1.
✓ Buildings	C. 2.
✓ Machinery, including Engines, Boilers, Dynamos, Exciters, Condensers, Pumps, Steam Appliances, Balancers, Boosters, and Switch-boards	C. 3.
✓ Accumulators at Generating and Distributing Stations ..	C. 4.
✓ Mains, Service Cables, Conduits, Pipes, &c., providing and laying	C. 5.
✓ Transformers and Sub-stations.. .. .	C. 6.
✓ Motors	C. 7.
✓ Electrical Instruments	C. 8.
✓ House Service	C. 9.
✓ Tools	C. 10.
✓ Meters and Indicators	C. 11.
✓ Free Wiring	C. 12.
✓ Public Lamps	C. 13.
✓ Office Furniture and Fittings	C. 14.
✓ Patents	C. 15.
✓ Licence, Provisional Order, or Act	C. 16.
✓ Preliminary Expenses	C. 17.

CHAPTER II.

COSTS AND CHARGES.

THE following elementary notes may be of interest. Electrical energy is charged per Board of Trade unit of 1,000 watt-hours, the unit being equivalent to 1,000 watts of electrical power in use for one hour. A Board of Trade unit is generally written B.T.U. Ordinary 8 c.p. carbon incandescent lamps require per candle power from $3\frac{1}{2}$ to $4\frac{1}{2}$ watts of electrical energy; 16 to 32 from 3 to 4 watts, according to the length of life allowed the lamp. If, therefore, an 8 c.p. lamp consumes 30 watts of electrical power it will consume one unit in $33\frac{1}{3}$ hours ($1,000 \div 30$). The higher the candle power per lamp the less number of watts required per candle power. There are, however, electric lamps on the market which give a larger candle power of light or greater illumination for the same consumption of electrical energy than the ordinary lamps. The initial cost of these lamps, as well as that of renewal, is greater than that of the ordinary lamps; but the saving is due, light for light, to economy in the reduced consumption of current. These lamps with tungsten filaments take one-third the power used by carbon lamps for the same candle-power.

In electricity the units of measurement are the Volt, which may be defined as the unit of pressure; the Ampere, or unit of

current; the Ohm, the unit of resistance; and the Watt, the unit of power.

$$\text{A Watt} = \frac{1}{746} \text{ horse-power, or } 746 \text{ watts} = 1 \text{ horse-power.}$$

Therefore $746 \times \text{horse-power} = \text{watts}$, and $\text{watts} \div 746 = \text{horse-power}$.

A Kilowatt = 1,000 watts.

If an 8 c.p. lamp consumes 30 watts, 20 such lamps will require (30×20) 600 watts, and if the pressure be 100 volts, the number of amperes is ($\frac{600}{100}$) .3 per lamp. The number of watts for each candle-power of light given is, of course, ($\frac{30}{8}$) 3.75.

For arc lamps for factories and workshops and public lighting the current varies according to the lighting power of the lamp; 10 and 12 amperes are, however, common. A 10 ampere lamp will use about 500 watts.

Broadly, there are two systems of supply, known as the "high pressure" and "low pressure," or "high tension" and "low tension."

The Board of Trade define 500 volts continuous, or 250 volts alternating, as high pressure supply, whilst below 500 volts continuous or 250 volts alternating are low pressure, a pressure of anything over 3,000 volts being defined as extra high pressure. The current generated may be "continuous," sometimes called "direct," or alternating. "Continuous" or "direct" current may be defined as current progressing continuously in the same direction, whilst alternating current is current rapidly progressing or flowing alternately in one direction and then in the other in the conductors.

The "high tension" system with alternating current is usually adopted in cases where the current has to be transmitted over long distances, sub-stations or distributing stations

being provided at convenient points, where it is transformed by transformers—*i.e.*, reduced to low pressure, or the pressure at which it is to be used by the consumer. In cases, however, where the supply is required within a radius of about a mile of the power station, the low tension continuous current system is usually adopted.

The Board of Trade regulations provide that the pressure of supply delivered to any consumer shall not, except with the approval of the Board, exceed 250 volts. The pressure of a supply delivered to a transforming station, or to a transforming apparatus on a consumer's premises, may exceed 250 volts, but must not exceed the limits of high pressure.

"Accumulators," "storage batteries," or "secondary batteries" are receptacles for the storage of electricity, which is conveyed to them by connections with the dynamo, which generates the current. In some small stations the demand at certain times is almost entirely supplied by accumulators, which are charged at intervals.

A dynamo is a machine which converts mechanical energy into electrical energy, and its capacity is expressed in kilowatts. To drive a dynamo requires, roughly, $1\frac{1}{2}$ horse-power per kilowatt—that is to say, a 250 K.W. dynamo requires about $(250 \times 1\frac{1}{2})$ 375 horse-power. A dynamo which is used to give a direct current is frequently termed a direct or continuous current machine, whilst a dynamo which is used to give alternating current is frequently termed an alternator.

There are different methods in vogue of charging for the consumption of current. On the "flat rate" system the total amount of energy supplied, measured by a meter, is charged for at a fixed price per B.T.U. By the Maximum Demand System a meter and a demand indicator are required, the meter registering the total consumption, and the indicator recording the

maximum demand—that is, the highest rate at which electrical energy is consumed at any time during a certain period. Two rates obtain. The maximum demand for a certain number of hours is charged at the higher rate, and all further consumption at the lower rate.

As electricity cannot be stored in large quantities, and even in any quantity without loss, a certain portion of the plant must be kept in readiness for the supply of the full quantity of current which a consumer may at any time require; and the object of the two rates is to make provision for the payment by the consumer of a due proportion of the standing charges before benefiting in the reduced price for the remainder.

Broadly, the charges incurred in the generation and supply of electrical energy may be described as (1) Standing or Fixed, and (2) Productive or Running.

✓ **The Standing Charges are :—**

- ✓ Depreciation. Say $7\frac{1}{2}$ per cent. on Capital Cost.
- ✓ Wages.
- ✓ Proportion of Fuel and Stores.
- ✓ Maintenance of Buildings, Mains, &c.
- ✓ Rent, Rates, and Taxes.
- ✓ Directors' Fees.
- ✓ General Establishment Charges.
- ✓ Salaries.
- ✓ Interest on Capital Outlay. Say 5 per cent.

The Productive Charges are :—

- Fuel.
- Oil, Waste, Water, and General Stores and Materials.

The Standing Charges are not affected by the output of electrical energy. They are incurred irrespective of the extent

of the output. On the other hand, the output, which varies according to the demand, affects the cost of production or running. The demand may assume different phases. At some periods of the day it may be for driving machinery (called a Day Load), at another time it may be for shops (Evening Load), and for private houses a Late Hour Load. The more continuous business that can be secured for the plant the cheaper the cost of production, and consequently that of the current to the consumer. The cost of production, as stated, affects the price to the consumer, these two considerations being controlled by the load factor.

We will suppose that the maximum capacity of the plant at the station is 470 kilowatts. Now, a kilowatt of plant will produce one unit per hour, and consequently 24 units in one day. If, therefore, the demand were such as to necessitate the use of the whole plant, say, continuously for 24 hours at full load, or on 100 per cent. load factor, the output in 24 hours would be $470 \times 24 = 11,280$; in 6 hours, 2,820 units, and so on.

The load varies from moment to moment. The use of energy in the day time may be small, thereby necessitating the running of a small portion only of the plant installed, whilst for one, two, or three hours during the evening a considerable percentage of the lamps connected with the mains may be in use, thereby necessitating the running of a larger portion of the plant. In any case, the provision of plant should be more than equal to the maximum load demanded, and the term "load factor" may be explained as the ratio of Board of Trade units sold in a given period to the number of units which would have been sold had the maximum load demanded been on the plant during the total number of hours in that period. In other words, the load factor is the ratio of actual output in units delivered to consumers to

the possible output if the maximum load demanded were continually in use throughout the period of supply. For example, the percentage load factor of a station is the result of—

$$\frac{\text{Units sold} \times 100}{\text{Maximum demand on feeders in K.W.} \times \text{hours of supply period}}$$

Example:—

$$\frac{28200 \times 100}{60 \times 2208} = \frac{21.28\%}{\text{K.W.}}$$

It may be remarked that in average cases of supply for private lighting the output is equal to a full load on the plant for about three hours a day, and the average load factor would therefore be three twenty-fourths or $12\frac{1}{2}$ per cent.

For instance, let us assume a daily three-hour consumer; period, January to March = 90 days. Now—

$$\begin{array}{ccccc} \text{Days} & \text{Hours per day} & \text{Watts per lamp} & & \\ 90 & \times & 3 & \times & 30 \\ & & & & = 8,100 \div 1,000 = 8\frac{1}{10} \text{ units.} \end{array}$$

The maximum demand is $\frac{30}{1000}$ K.W., and

$$\frac{8\frac{1}{10} \times 100}{\frac{30}{1000} \times 2160} = 12\frac{1}{2}\%$$

In order to generate current economically the site of a steam-driven Generating Station should be near a river, where water is abundant for condensing and boiler feeding purposes, and where coal may be delivered and handled without undue expense. We will assume the following illustration:—

Plant capacity, 2,000 K.W.

Annual output 1,333,000 B. of T. units.

Standing charges, £14,000 per annum.

Production charges, £6,000 per annum.

Standing charges, $\frac{14,000}{2,000} = £7$ per K.W. of plant per annum

Production charges, $\frac{6,000 \times 240}{1,333,000} = \frac{d.}{1.08}$ per unit.

We will suppose that a consumer's bill for three months, April, May, and June (91 days), amounts to 2,000 units, and that the tariff is 8d. per unit for one hour's use of maximum demand on the average per day, and 2d. per unit for any quantity in excess thereof. At the end of June it is found that the maximum demand at any time during the 91 days has been 12 kilowatts. We therefore have—

The cost to the consumer—		£	s	d
12 × 91 = 1,092 units @ 8d. =	36	8	0	
2,000 - 1,092 = 908 „ „ 2d. =	7	11	4	
	<u>2,000</u>	<u>£43</u>	<u>19</u>	<u>4</u>

Average price = 5.27d. per unit.

The cost to the Electricity Works is, roughly—

Standing Charges.

1 Kilowatt = £7 per annum.	
12 Kilowatts = £84 „ „	
Or £21 per quarter. £21 ÷ 2,000 = 2.52d. per unit sold.	

Productive Charges.

Pence.	
1 Unit costs ..	1.08

Total Cost.

d.	
Standing charges ..	2.52
Productive charges ..	1.08
Total ..	<u>3.60 and</u>

d.	
Average price charged per unit ..	5.27
Less Cost ..	<u>3.60</u>

1.67 per unit profit, without taking into consideration loss in transmission, transforming, &c.

Supposing that the 2,000 units had been consumed at a uniform rate of six hours per day, the maximum demand would have been—

$$\frac{2,000}{91 \times 6} = 3.66 \text{ K.W.}$$

On this basis the charge to the consumer would have been—

		£	s	d
3.66 × 91 = 333 units @ 8d. ..	11	2	0	
And 2,000 - 333 = 1,667 „ „ 2d. ..	13	17	10	
	<u>2,000</u>	<u>£24</u>	<u>19</u>	<u>10</u>

Average price 3d. per unit.

The cost to the Electricity Works would have been—

1 Kilowatt = £7 per annum.
3.66 Kilowatts = say, £25 per annum.

Or, say, £6 per quarter and $\frac{6 \times 240}{2,000} = .7$ per unit sold.

Productive Charges.

Pence.			
1 Unit costs ..	1.08	Average price ..	3d.
Charge: ..	.7		
	<u>1.78</u> Cost.	Cost price ..	1.78
		Profit ..	<u>1.22</u>

It will therefore be seen from the above simple illustration that heavy demands for short periods per day upon the Electricity Supply Station are costly both to the consumer and the producer, and that the small consumer who makes a steady or uniform demand over a reasonable period daily (though his total consumption for the same period is much less than that of the large consumer) is a more profitable customer to the Lighting Company than the large consumer who makes a large but brief daily demand upon the Station plant, whilst relatively the cost to the small consumer is less than that to the large consumer.

A manufacturer proposes to instal a 100 horse-power motor to drive machinery. Estimate the number of Board of Trade units per annum, assuming that the motor runs, say, for 261

days per annum at 9 hours per day, and for 52 days at 5 hours per day.

$$\begin{array}{r} 261 \times 9 = 2,349 \\ 52 \times 5 = \underline{260} \\ 2,609 \text{ Hours, and} \end{array}$$

Assuming the motor to have an efficiency of 92 per cent., the energy used is given by

$$\frac{746}{92} \times 100 \times 2,609 \div 1,000 = 211,556 \text{ Units.}$$

In practice the consumption would usually be much less, as motors are rarely run at full load for long.

A consumer has fifteen 24 c.p. lamps, each lamp burning, say, 30 watts. He is charged 7d. per unit for 100 hours' use per quarter of the maximum demand, and 2d. per unit for the remainder. His consumption, we will assume, is as follows. January to March.

No. of days	No. of lamps used	Hours used daily	No. of watts	Watt hours
20	2	2	80	2,400
40	6	3	720	21,600
20	12	4	960	28,800
10	15	5	750	22,500
				<u>75,300</u>

$$\text{and } \frac{75,300}{1,000} = 75 \text{ Units.}$$

His maximum demand is $15 \times 30 \div 1,000 = \frac{9}{20}$ K.W., and

$$\dagger \frac{9}{20} \times 100 = 45 \text{ Units @ } 7\text{d.} = \text{£}1 \ 6 \ 3$$

$$75 - 45 = 30 \text{ ,, ,, } 2\text{d.} = 0 \ 5 \ 0$$

$$\underline{\text{£}1 \ 11 \ 3}$$

$$\dagger \frac{15 \times 30 \times 100}{1,000} = 45 \text{ Units.}$$

The connections to a power station were formerly expressed as being equivalent to so many 8 c.p. lamps. For instance, assume a power station with the following connections:—

- (a) 5,000 8 c.p. lamps = = 5,000
- (b) 20 8 h.p. motors = $(746 \times 8 \times 20 \div 30) = 3 \ 978$
- (c) 1,000 16 c.p. lamps = = 2,000
- (d) 50 20 h.p. motors = $(746 \times 20 \times 50 \div 30) = 24,866$

$$\text{Equivalent to, say .. } \underline{35,844 \text{ 8 c.p. lamps}} \\ \text{(30 watts)}$$

See note on page 18 as to present practice.

The equivalent of the flat rate system to that of the maximum demand may be exemplified as shown below.

First hour, or 1 hour per day consumer Flat Rate.
Second hour, or 2 hours per day consumer, 1 hour 4d.

1 hour 1

$$\underline{5 \div 2 = 2 \ 5}$$

Third hour, or 3 hours per day consumer, 1 hour 4d.

2 hours 2

$$\underline{6 \div 3 = 2}$$

Fourth hour, or 4 hours per day consumer, 1 hour 4d.

3 hours 3

$$\underline{7 \div 4 = 1 \ 75}$$

Fifth hour, or 5 hours per day consumer, 1 hour 4d.

4 hours 4

$$\underline{8 \div 5 = 1 \ 60}$$

And so on.

That is to say, taking a four-hour consumer, 4d. for the first hour and 1d. for remainder :—

1 Unit @ 4d.	..	..	=	4d.
3 Units „ 1d.	=	3
<hr/>				
4 Units	<u>7</u>

on the maximum demand system is equivalent to

4 Units @ 1.75d.	=	<u>7d.</u>
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on the flat rate system on the basis of the tariff indicated.

With regard to wiring and fittings, these have often to be provided by the consumer at his own cost. Some companies, however, agree on certain conditions to provide the material and do the work free of charge, slightly increasing the price per unit, or the consumer may at any time purchase the wires and fittings, when he pays the ordinary price charged for current, or the cost may be spread over a period of, say, three years, payable in equal monthly instalments. Arc lamps are used principally outdoors, but they are equally suitable for large indoor places, such as factories, &c.

Let us assume a charge of 7d. and 2d. on the maximum demand principle, the 2d. per unit being charged for all consumption, with the exception of that portion represented by one hour's daily use, say, per quarter of the maximum demand during the period, which is charged at 7d. Out of the 7d., 5d. per unit is supposed to cover the standing charges, and the 2d. per unit the cost of production and the profit. The consumer's account we will suppose is for the March quarter, and that it shows a consumption of 2,000 units, the maximum amount of electrical power that he has demanded at any time during the quarter being five kilowatts, which for 90 days would amount

to 450 units. On the basis named, the accounts, exclusive of meter rental, would be as under :—

450 Units @ 7d.	..	..	..	=	£	s	d
1,550 Units „ 2d.	..	..	..	=	13	2	6
<hr/>					12	18	4
2,000					£26	0	10

If his maximum demand (M. D.) had only been two kilowatts, the account would have been—

180 Units @ 7d.	..	..	..	=	£	s	d
1,820 Units „ 2d.	..	..	..	=	5	5	0
<hr/>					15	3	4
2,000					£20	8	4

Supposing, for the sake of illustration, an 8 c.p. lamp of 33.33 watts efficiency alight for 8,760 hours (365 × 24)—being, of course, renewed from time to time—the number of units would be $33.33 \times 8,760 \div 1,000 = 292$, and the maximum demand, so far as this particular supply is concerned, would, of course, never exceed $\frac{33.33}{1,000}$ K.W. The load factor for this supply would thus be 100 per cent., viz. :—

$$\frac{292 \times 100}{33.33 \times 8,760} = 100$$

Supposing, however, it were only alight for four hours a day, this would be equivalent to a load factor of

$$\frac{4}{24} \times 100 = 16\frac{2}{3}\%$$

That is to say, the lamp would be alight for 16 $\frac{2}{3}$ per cent. of 24 hours, or four hours per day, viz. :—

$$24 \times 16\frac{2}{3} \div 100 = 4 \text{ hours.}$$

The Diversity factor is the ratio of the actual load on the feeders to the sum of the maximum demands of all the consumers, viz. :—

$$\frac{\text{Maximum load on feeders in Kilowatts} \times 100}{\text{Sum of Consumers' maximum demands in Kilowatts}} = \% \text{ Diversity Factor}$$

Method of ascertaining the maximum demand for any number of lights.

$$\text{Say Number of 50 c.p. Lamps burning at one time} \times \frac{60 \text{ Watts taken by a 50 c.p. lamp}}{100} \times \text{say 100 Hours per quarter.}$$

= the maximum demand, or number of units at the higher price.

Let us assume the following statistics for a certain quarter of an Electric Lighting Station :—

Capacity of station, 350 K.W.

Connections equal to 8,000 8 c.p. lamps.*

Used on works, 2,138 units.

Sold, 25,659 units.

Lost in distribution, 9,971 units.

Generated, 37,768 units.

Maximum demand on station, 110 K.W.

Maximum demand on feeders, 102 K.W.

Here the load factor is

$$\frac{25659 \times 100}{102 \times 2208} = 11.3\%$$

Suppose the following meter readings :—

September Quarter.		
	Meter reading.	Indicator reading.
July 5	5,419 Units.	140 Units.
Aug. 3	5,527 „	140 „
Sept. 2	5,670 „	145 „
Oct. 2	5,816 „	140 „

In some cases, instead of the largest quantity demanded at any one time during the period represented by the account, the average maximum demand is taken for the purpose of the higher rate of charge. In the above illustration we have $(140 + 140 + 145 + 140) \div 4 = 141$ average maximum demand.

* The old method of reckoning connections to the mains as equivalent to so many 8-c.p. carbon lamps is being superseded either by expressing them in kilowatts, or in terms of 33 watt or 30 watt lamps.

The total number of units to be charged would be 5,816 - 5,419 = 397, of which 141 would be at the higher rate and 256 (397 - 141) at the lower rate on the maximum demand system.

The system is sometimes merged into a fixed average rate per unit, which is applied to those cases in which the account for the energy supplied on the maximum demand principle would exceed that rate, e.g.,

				Pence.
95 Units @ 7d.	..	..	=	665
60 Units „ 2d.	..	..	=	120
155				785 and
785	= say an average of 5d. per unit.			
155				

If the fixed average rate were $4\frac{1}{2}$ d., the consumer would be charged at that rate, or allowed $\frac{1}{2}$ d. per unit on the M. D. basis, which is the same thing.

In some cases the system has been adopted of charging a fixed sum per quarter, say 1s. 6d. for every 25 c.p. (30 watt) lamp connected, and a low price, say $1\frac{1}{2}$ d. or 2d. per unit, for all energy supplied. For instance, assume a 6-25 c.p. lamp installation—efficiency 30 watts—

$$\begin{aligned} (a) \text{ 3 hours' daily use. } & 90 \text{ days per quarter.} \\ 30 \times 6 \times 3 \times 90 \div 1,000 & = \text{say 49 units, and} \\ 6 \text{ lamps @ 1s. 6d.} & = \text{£ } 0 \text{ } 9 \text{ } 0 \\ 49 \text{ units „ 2d.} & = \text{£ } 0 \text{ } 8 \text{ } 2 \\ & \text{£ } 0 \text{ } 17 \text{ } 2 \end{aligned}$$

$$\frac{17s. 2d.}{49} = \text{say } 4\frac{1}{2}d. \text{ average price per Unit.}$$

$$\begin{aligned} (b) \text{ 4 hours' daily use. } & 90 \text{ days.} \\ 30 \times 6 \times 4 \times 90 \div 1,000 & = \text{say 65 units, and} \\ 6 \text{ lamps @ 1s. 6d.} & = \text{£ } 0 \text{ } 9 \text{ } 0 \\ 65 \text{ units „ 2d.} & = \text{£ } 0 \text{ } 10 \text{ } 10 \\ & \text{£ } 0 \text{ } 19 \text{ } 10 \end{aligned}$$

$$\frac{19s. 10d.}{65} = 3.66 \text{ average price per Unit.}$$

In other instances we may note the system of charging a fixed sum per quarter for every 25 c.p. lamp simultaneously alight, as shown by the demand indicator, and a low price for all energy taken. On this basis we shall premise that the tariff is 1s. 9d. per quarter for each 25 c.p. lamp simultaneously alight, and 1d. per unit for all energy supplied; that the installation is equivalent to twelve 25 c.p. lamps of 33.33 watts efficiency; and that during a quarter the consumer has in actual use, say for 89 days at three hours per day, eight lamps simultaneously alight, and for one day for four hours twelve lamps simultaneously alight.

$$\begin{aligned} \text{Now } 33 \times 8 \times 89 \times 3 \div 1,000 &= \text{say } 70 \\ \text{And } 33 \times 12 \times 1 \times 4 \div 1,000 &= \text{ " } 2 \\ &= 72 \text{ Units.} \end{aligned}$$

The quarterly account would be—

12 lamps @ 1s 9d.	=	£	s	d
72 units " 1d.	=	0	6	0
		£1	7	0

Contrasting this method with that of charging, say, 2d. per unit for all energy consumed over 100 hours' use per quarter of the maximum demand at, say, 7d., we have the consumption as ascertained above—viz., 72 units.

$$\begin{aligned} \text{The maximum demand} &= \frac{33 \times 12}{1,000} = \frac{396}{1,000} \\ &= .396 \text{ K.W. and 100 hours' use} = \text{say } 40 \text{ Units.} \end{aligned}$$

40 Units @ 7d.	..	..	=	£	s	d
72 - 40 = 32 @ 2d.	..	..	=	0	5	4
				£1	8	8

1s. 9d. per lamp per quarter is equivalent to, say, £10 10s. per K.W. per annum, viz. :—

$$\frac{(1s. 9d. \times 4) \times 1,000}{33.33}; \text{ or}$$

Supposing a daily demand for 90 days of, say, 10 amperes for five hours per diem, voltage 200.

$$\begin{aligned} 90 \times 5 \times 10 &= 4,500 \text{ amperes hours} \times 200 = \\ 900,000 \text{ Watt-hours} \div 1,000 &= 900 \text{ Units.} \end{aligned}$$

The maximum demand =

$$\begin{aligned} 10 \times 200 \times 100 \text{ hours' use} \div 1,000 &= \\ 200 \text{ Units at higher rate.} \\ 700 \text{ " " lower rate.} \end{aligned}$$

As an illustration of one of the many methods of constructing a power tariff, we may suppose a charge of 25s. per kilowatt demanded per quarter, and for all energy supplied a flat rate (as calculated below) fluctuating with the number of units supplied in each quarter.

Hour consumer	Load Factor	Standing Charges per Unit	Remaining Charges per Unit					and so on.
			1 resulting in	'95 average prices per unit as below.	'90	'85	'80	
1	4.16	3.287	4.287	4.237	4.187			
2	8.33	1.643	2.643	2.593	2.543			
3	12.50	1.095	2.095	2.045	1.995			
4	16.66	.823	1.773	1.773	1.723			
and so on up to 24 hour.								
Quarterly Consumption..			25,000	37,500	50,000	75,000		

By way of explanation we may note as follows :—Take the one hour per day consumer, his load factor is $\frac{1}{24}$ of 100 = 4.16 per cent. 25s. per kilowatt demanded per quarter is nominally at the rate of £5 per kilowatt per annum, and the standing charges per unit for a one hour consumer is therefore $£5 = \frac{1,200 \text{ pence}}{365 \text{ hours}} = 3.287$, a two hours' consumer $\frac{1,200}{730} = 1.643$, and a three hours' consumer $\frac{1,200}{1,095} = 1.095$, and so forth. The

running rates descend in the ratio of 5 per cent., whilst the quarterly consumptions, of course, ascend in the same proportion. Thus, under 1d. and opposite one hour consumer, is 4.287 pence, which is the total of 3.287 standing charges + 1d. running charges = 4.287 pence, and similarly with the other hour consumers. Under .95, and opposite the one hour consumer, is 4.237, which is made up of 3.287 + .95 = 4.237, average price per unit. Under .95 and opposite the two hour consumer is 2.593, which is composed of 1.643 + .95 = 2.593 average price per unit.

Let us take one hour per diem, with a quarterly consumption of 25,000 units, his average price per unit as shown by the tariff is 4.287 pence.

A 4.166% load factor is, of course, a one hour consumer, *e.g.*,
 $\frac{4.166 \times 24}{100} = 1 \text{ hour.}$

1 hour \times 365 days = 365 hours, and $365 \div 4 = 91.25$ hours per quarter,

and $\frac{25,000}{91.25}$ makes the maximum demand in kilowatts, say 274, and

	£	s	d
274 Kilowatts @ £1 5s. ..	342	10	0
25,000 Units @ 1d. ..	104	3	4
	<u>£446</u>	<u>13</u>	<u>4</u> and

$\frac{£446 \text{ } 13\text{s. } 4\text{d.}}{25,000} = 4.28 \text{ average price per unit: as shown by the tariff.}$

Again, 3.287 price per unit for one hour consumer at 25s. per kilowatt demanded per quarter— $3.287 \text{ pence} \times 91\frac{1}{4} \div 12 = 25\text{s. per kilowatt.}$

As a further illustration of a power tariff, let us construct a table on the basis of 4d. per unit for the first 100 hours' use per quarter, and 1d. per unit for all further consumption.

Load Factor	13.7%	16%	18.3%	20.6%	&c. &c.
Average price per Unit per quarter	2	1.857	1.75	1.666	&c.
Maximum demand in Kilowatts per quarter as below	Consumption per Quarter				
1	300	350	400	450	
2	600	700	800	900	
3	900	1,050	1,200	1,350	
4	1,200	1,400	1,600	1,800	
5	1,500				
&c.					

A 13.7 per cent. load factor will give us a daily use of $\frac{100}{13.7} = 7.299$, and $\frac{24}{7.299} = 3.288$ hours per day and $91\frac{1}{4}$ days per quarter = $91.25 \times 3.288 = 300$ units per quarter. Similarly with the other load factors, which have been chosen for the purpose of arriving at the maximum quantity of power demanded in round numbers. The table may be prepared, of course, for all load factors.

The consumption numbers below "consumption per quarter" are consequently merely the multiplication of these opposite one K.W. by the maximum demand in K.W., whilst the numbers opposite one K.W., and under the different load factors, are the result of selecting load factors which will give the increase in round numbers of 50 units for each increase in load factor. Supposing a power consumer arranges for a demand of three K.W. and guarantees a consumption of not less than 1,050 units per quarter, he would be charged 1.857 per unit, as shown in the column opposite average price, viz. :—

	£	s	d
1,050 Units @ 1.857	8	2	6
1,050 Units — M.D. 300 = 750 and			
300 @ 4d.	5	0	0
750 .. 1d.	3	2	6
	<u>£8</u>	<u>2</u>	<u>6</u>

Sometimes discounts are allowed based on the load factor. The rates of charge with and without discounts may be shown in graph form.

Any consumption, say, below 300 units per quarter per kilowatt, which is equivalent to $3\frac{1}{4}$ hours' use per day, may be charged at the private lighting rate, according to the conditions imposed by the company. Dividing the actual consumption by the maximum demand for the same period affords the consumption per kilowatt demanded per quarter, and if such consumption be within or over the units specified in the tariff, but not less nor more than the limits imposed, the customer will be charged at the rate per the quantity specified. If under or in excess of the limits he will be charged on the higher or lower rate, as the case may be.

The A Company agrees to give a supply in bulk on the basis of £1 in each quarter of the year per kilowatt of the maximum demand, and in addition at the following rates for the energy supplied :—

Quarterly Consumption.	Price per Unit.
Not exceeding, say, 37,500 units per quarter ...	1d
Exceeding 37,500, but not exceeding 50,000 units	.95d.
„ 50,000 „ „ 75,000 „	.90d.

and so on with a minimum of .50 per unit when the units per quarter exceed 600,000. Prices may be revised at stated periods.

The variations throughout the year of the maximum quantity demanded at any one time might be as follow :—

	K.W.
March quarter, say M.D.	100.
June „ „	75
Sept. „ „	60
Dec. „ „	98

On the above figures the cost of the maximum demand for the year would be—

March	£100
June	75
September	60
December	98
Total.. ..	<u>£333</u>

The charge for the hire of meters usually ranges from 1s. to 2s. 6d. per quarter.

For motive purposes current is supplied at a much less rate than that for lighting.

The hire of motors (simple hire) may cost the consumer :—Cost of motor, plus, say, 20 per cent., divided by 20 (four quarters for five years), equals permanent quarterly hire.

If on the hire-purchase the period may be limited to three years, and the hire in that case equals :—Cost of motor, plus, say, 20 per cent., divided by 12 (four quarters for three years), equals quarterly hire for three years, after which it becomes the property of the consumer.

6d. Stamp.

AGREEMENT FOR HIRE OR HIRE-PURCHASE OF MOTORS.

This Agreement made the _____ day of _____ 191 ,
between the

in the
(hereinafter called the "Company," which expression shall, unless the context otherwise require, be deemed to include its successors and assigns), of the one part, and

of
(hereinafter called the "Hirer"), of the other part.

1. The Company agrees to let on hire to the Hirer, and the Hirer agrees to take on hire from the Company, the motor which is more particularly specified in the schedule hereunder. The Motor shall be supplied (and fixed) by the Company at the Company's expense.

2. The Company will supply and the Hirer will take from the Company the whole of the electrical energy required for the above-mentioned Motor, upon the conditions expressed in this Agreement and in the Company's Provisional Order.

3. The Hirer agrees to pay the Company £ per quarter by way of rent for the Motor. Such payment to commence from the day of , and to continue until the hiring shall be determined, under the provisions hereinafter contained; the first payment, or a proportionate part thereof, to be made on the day of .

4. The Hirer shall also pay to the Company for the electrical energy supplied for the said Motor in accordance with the scale of charges for the time being in force in the Company's area of supply between the Company and its Consumers who are owners of their own Motors.

5. The Hirer shall, during the hiring, keep the Motor in good repair and working order, and bear the expense of all renewals—*e.g.*, brushes, &c.—and repairs which shall become necessary, except such as shall be rendered necessary by the default of the Company, or shall be the natural result of fair wear and tear, such excepted renewals and repairs being made good by the Company so far as the Motor is concerned.

6. The Hirer will not, during the hiring, sell or offer for sale, or assign, mortgage or underlet, or otherwise part with the possession of, the Motor or any part thereof, or remove the same or any part thereof from the above-mentioned address of the Hirer without the previous consent in writing of the Company.

7. The Hirer will, during the hiring, punctually pay the rent of the premises occupied by him in which the Motor is affixed.

8. The Hirer will, during the hiring, permit the Company and their agents and employees, at all reasonable hours, to enter upon the Hirer's premises to inspect the condition of the Motor, and to make good any defects for which, under this Agreement, the Company shall be responsible, and to remove the Motor whenever the Company shall, under the provisions of this Agreement, become entitled to have possession thereof.

9. If the Hirer shall desire to terminate the hiring, he shall be at liberty to do so on any one of the usual quarter days after the day of , upon giving not less than one quarter's notice to the Company of his desire so to do; and at the expiration of such notice the hiring shall be determined, and the Hirer shall thereupon deliver up the Motor to the Company.

10. If the Hirer do not pay the rent hereby reserved, or do not fulfil the conditions of this Agreement, or if the Hirer give to the Company such notice as is mentioned in Clause 7 hereof, or if a Receiving Order in Bankruptcy is made against the Hirer, or if he shall execute an Assignment for the benefit of his creditors, or arrange or compound with the greater number in value of them, or if he shall suffer his effects to be distrained upon or taken in execution, or allow any judgment against him to remain unsatisfied, then, and in any of

the said cases, the hiring shall become immediately terminable at the option of the Company, and the Company, their agents or employees, may enter upon the premises and take possession of and remove the Motor, doing as little damage as may be.

11. If the hiring is determined under either Clause 7 or Clause 8 of this Agreement, the Company may, notwithstanding the return or taking possession of the Motor, recover by action from the Hirer all rent payable in accordance with the terms of this Agreement, and also damages for any defect in the Motor other than such defect as, under the terms of this Agreement, the Company would be bound to make good, and any costs, expenses, and payments necessarily or properly incurred or made by the Company in connection with obtaining possession of the Motor; and the Hirer shall not be entitled to any allowance or return in respect of rent paid or set-off in respect of money spent on the Motor.

12. When the Hirer shall have paid to the Company rents amounting in the aggregate to the sum of £ , then the Motor becomes the property of the Hirer; but until the Hirer shall have paid the sum aforesaid the Motor shall remain the sole property of the Company, and the Hirer shall not be deemed to have bought or agreed to buy the same.

13. The Company shall have the right to assign the Motor (subject to this Agreement) and the Benefit of this Agreement to any other Company or Local Authority or person.

Signature of Hirer.....

In some "Free Installations" the company undertakes to instal so many lamps, say six 16 c.p. incandescent lamps, including the necessary wires, fittings, shades, &c., free of charge, on the premises, charging a certain rate per Board of Trade unit for any quantity up to that which would be taken by the maximum number of lamps on at any one time burning 100 hours per quarter, and a reduced rate per unit afterwards, as well as a rental of 2s. 6d. per quarter for the meter. A stipulation is also made that if in any one quarter the value of the electricity so supplied is less than, say, 12s., the consumer agrees to pay by way of rental for the installation such a sum as shall make up a minimum payment of 12s. per quarter. All repairs and maintenance of the installation are done by the company at the expense of the consumer, and the installation remains the property of the company until otherwise mutually agreed.

CHAPTER III.

PURCHASE, STORAGE, AND RECORD OF STORES AND MATERIALS.

IN concerns of magnitude periodical contracts or arrangements are sometimes made for the supply of such stores and materials as can be conveniently and advantageously contracted for (the quantities being based upon previous experience and estimated future requirements), but non-committal as regards the actual quantities which shall be taken, which may be either less or more than those named in the contract, and in cases of materials which may from time to time be required outside contracts competitive invitations are issued. It is, of course, very desirable that firms which make a speciality of certain goods which may be required should be selected for the purpose of competition, and where it is possible, and the possibility is combined with economy, supplies obtained direct from the manufacturers.

Close attention is absolutely necessary to every minute detail in connection with the purchase of stores and materials.

It will be noticed in what follows that invitations usually stipulate for delivered prices. The practice of manufacturers is, however, variable. Some quote delivered prices in response to all inquiries, except those not exceeding £2 or £5 in value; whilst others quote inflexibly f.o.r. at the Works, charging, if pre-arranged, say, 5 per cent. on the value of the order for the carriage. Where it is necessary to obtain railway rates it should be noted whether they are quoted only S. to S.—i.e., station to station—or whether they include collection and delivery (C. and D.).

The following is a usual form of invitation to tender :—
THE WROXHAM ELECTRIC LIGHTING COMPANY, LIM.
WROXHAM,
January 21st 1912.

To THE GENERAL MANUFACTURING COMPANY,
UPPERTON.

Dear Sirs,

Please quote your lowest prices on this form in the space below for the following goods, and state the time required for delivery.

Prices must include delivery to the Company's station at Wroxham, and be subject to a discount of 2½% for payment on our usual pay day.

Packing cases, &c., should not be invoiced, as no charge therefor can be recognised; but every endeavour is made to return such empties as are worth returning.

Yours truly,
JOHN ROBINSON, *Secretary*.

Quantity, or Weight	Description of Goods	Price	Per	Less Trade Discount	Date of Delivery
Tons 10	Pure Trinidad Bitumen				

To THE WROXHAM ELECTRIC LIGHTING COMPANY, LIM.

We agree to supply the goods that you require, or any portion thereof, in accordance with your conditions as stated above.

THE GENERAL MANUFACTURING COMPANY.

January 22nd 1912.

All orders issued for stores, &c., as well as all invoices passed in respect thereof, are entered in a book designed as follows :—

LIABILITY ON ORDERS PLACED.		January 31st 1912.	
		£ s d	£ s d
Total Value of Orders placed to date	..	298 13 0	
Less Total Amount of Credits	..	0 4 3	
Total Value of Invoices passed to date	..	112 0 6	298 8 9
Less Total Amount of Credits	..	0 1 9	
		111 18 9	
		£186 10 0	

Total Value of Orders executed, but not passed for payment, and Orders unexecuted as per Estimated Liability below :—

RECONCILIATION.

Con-secutive No.	Date of Order	Order No.	Name	Description	Estimated Liability		Remarks
					Orders Executed for which Invoices have not been passed	Orders Unexecuted	
3	1912 Jan. 5	26	W. Jones	Installation, "Ivydene"	£ s d	£ s d	
5	9	28	Newton Manufacturing Co.	8 C.P. Lamps	5 10 0	10 0 0	
7	14	30	Nut and Bolt Co., Ltd.	Nuts and Bolts	5 10 0		
8	15	31	Electric Supply Co.	Lamp Holders	10 0 0		
9	18	32	Do.	Coal	5 0 0		
10	22	33	Jas. Wilkinson	Motor	97 0 0	54 0 0	Balance of Order
11	23	34	Electric Manufacturing Co.			£64 0 0	
					£121 10 0		

In the Stores Warehouse recesses should, as far as possible, be provided for the methodical and economical storage of goods, and at the front of each recess there should be exhibited what is known as a Stores Card, viz. :—

No. of RECESS 12

Name of Article 16 C.P. Lamps
 Maximum Supply to be kept 500
 Minimum Supply to be kept 250

RECEIVED				ISSUED			
Date	From whom received	Price	Quantity	Date	Quantity	Date	Quantity
1912 Aug. 6	The Newton Manufacturing Co.	6d.	300	1912 Sept. 1	10		

the object and utility of which are obvious from the above illustration. At the entrance to each series of recesses should be exhibited an Index Card of the articles stored in each series, viz. :—

No. of Recess	Description of Article
1	8 C.P. Lamps
2	16 C.P. Lamps
3	Lamp Globes
4	Tape
5	Compounds

The storekeeper should ascertain his requirements monthly, and send particulars to the Engineer on a Requisition Form, viz. :—

THE WROXHAM ELECTRIC LIGHTING COMPANY, LIM.

No. 42.

February 18th 1912.

PARTICULARS OF MATERIALS AND STORES REQUIRED.

Quantity	Description	Quantity in hand	For what purpose required †
Barrels ..	Dynamo Oil	1	Stock
Cwts. ..	Coloured Waste	25 lbs.	Do.

† This is generally for Stock.

JOHN JONES, *Storekeeper.*TIMOTHY ATKINS, *Engineer.*

by whom they should be closely scrutinised and countersigned.

All orders are prepared and issued by the Secretary.

Form.—

THE WROXHAM ELECTRIC LIGHTING COMPANY, LIM.

No. 246.

(Requisition No. and Date.)

February 7th 1912.

To WM. BROWN & SON,

UPPERTON.

Please supply and deliver to this Company's Station at Wroxham on or before 25th inst., carriage paid, and send us advice of despatch,

6 Barrels No. 1 Engine Oil.

Price, 10d. per Gallon. Less 2½%.

JOHN ROBINSON, *Secretary.*

The Requisitions should be methodically filed for future reference, if necessary.

A carbon copy of each order is supplied to the requisitionist.

The advices, as received, should be passed to the storekeeper, who checks the receipt of the goods therewith. The supplies are passed or rejected, as the case may be, by the Engineer.

Any complaint in respect of either quantity or quality should at once be reported to the Secretary, so that he may take the matter up with the supplier.

Advices should be carefully filed, and kept for a reasonable period.

To urge delivery a post card in the following form may be issued :—

THE WROXHAM ELECTRIC LIGHTING COMPANY, LIM.

February 23rd 1912.

We are urgently in need of the goods indicated below, and shall be obliged if you will inform us on this card by return of post when we may expect delivery.

To THE NEWTON MANUFACTURING CO.,
NEWTON.

JOHN ROBINSON, *Secretary,*

Order No.	Date	Goods Ordered	Date when delivery will be made
214	1912 Jan. 31st	Oils	

DateSignature.

No materials or stores are issued by the storekeeper without the production of a Requisition signed by a responsible person.

Form.—

No. 46.

THE WROXHAM ELECTRIC LIGHTING COMPANY, LIM.

March 28th 1912.

To THE STOREKEEPER.

Please supply the following Goods.

Quantity	Description	Appropriation	Rate	Amount
20 lbs.	Bleached Wipers	Generation A. 2.	3d. †	£ s d 0 5 0 †

† These columns are completed by the Storekeeper.

Received above goods.

WM. JENKINS.

WM. JENKINS.

It is usual to keep a full set of Stores Books—i.e., Stores Ledger, Stores Received and Stores Issued Books. The goods received are entered in the Stores Received Book, which may be in the following form:—

STORES RECEIVED BOOK.

Date	Stores Ledger Folio	Name	Particulars	No.	Weight			Rate	Amount	Freight, Carriage, &c.	Remarks
					T.	C.	Q.				
1912 Jan. 6 7 8	21 14 5	R. Sons & Co. W. Williamson, Lim. J. B. Newton	Crank Chamber Oil .. Coloured Cotton Waste .. Are Lamp Carbons ..	Barrels 4 .. 50	.. .. ..	.. .. ..	.. .. ..	1/- gall. 12/6 1½	£ s d 8 0 0 3 2 6 0 6 3	£ s d 0 5 0	M. & N. Railway Co.

The entries in the Stores Received Book are posted to suitable classified accounts in the Stores Ledger. When inward cartage, freight, or carriage is incurred in respect of supplies, it is, of course, included in the cost of the goods received as well as in the price of the goods issued.

The requisitions, after having been executed, are entered in the Stores Issued Book, viz.:—

STORES ISSUED BOOK.

Date	Stores Ledger Folio	Department	Description	No.	Weight			Rate	Amount	Allocation
					T.	C.	Q.			
1912 Feb. 14 15 16 17	12 13 14 15 16	Generation .. Do. Distribution .. Generation .. Do.	Class Paper .. Bolts .. Coal .. Sheet Lead .. Cement ..	Sheets 12 12 1 1 Bag	.. .. .. .. ..	.. .. .. .. ..	.. .. .. .. ..	rd. 10/-	£ s d 0 1 0 0 10 0 0 10 0 0 5 0 0 6 0	A 2 A 8 A 1 A 7 A 6

The entries in the Stores Received and Stores Issued Books are posted to suitable accounts (according to description of material or stores) in the Stores Ledger, which is in the following form:—

Dr.

STORES LEDGER.—OILS.

Cr.

Date	Stores Received Book Folio	Name	Particulars	Weight No. of Gals.	Rate	Amount	Date	Stores Issued Book Folio	Particulars	Appropriation	Weight No. of Gals.	Rate	Amount
1912 Jan. 6	2	The New Oil Co.	Dynamo Oil	240	1/6	£ s d 18 0 0	1912 Jan. 9	3	A Generation	A 2	4	1/6	£ s d 0 6 0
7	"	Wm. Robertson	Turbine Oil	40	1/6	3 0 0							

The descriptions of Materials may be classified for the above purpose, somewhat as follow:—

Accumulator Accessories
Boiler Fittings
Crank Chamber Oil
Carbons
Cable
Cut-outs
Coal
Dynamo Oil

Engine Room Stores
Gauge Glasses
Indiarubber Rings
Lamps
Ironmongery, &c.
Mains Sundries
Meter Boards
Meters and Demand Indicators

Machine Fittings
Packing
Public Lamp Fittings
Solder
Screws
Paraffin
Wire
Wiring Accessories, &c. &c.

A record of the Tools purchased may be kept in the Stores Ledger.

Any goods returned to stock for re-issue are particularised in the following form:—

THE WROXHAM ELECTRIC LIGHTING COMPANY, LIM.

March 14th 1912.

To THE STOREKEEPER.

Please receive the following Goods.

Job No., if any	Allocation Reference	Description	Quantity or Weight	Rate	Amount
M. 6	Buildings C. 1	Cement	$\frac{1}{2}$ ton	38/- †	£ s d 19 0 †

† These columns are completed by the Storekeeper.

ROBERT EVANS, *Engineer or Foreman.*

JOHN JONES, *Storekeeper.*

Material returned, not having been used, is taken into stock at cost price and credited to the original allocation. If the material returned has been in use, and has, of course, depreciated, but can be used again, it is taken back into stock at its then value, and the original allocation credited accordingly. The storekeeper should take care to see, in entering such returns to stock in his Stores Received Book, that he keeps full particulars of the Departmental Credit Notes in which they are taken into stock.

The Credit Notes are attached, with the Requisitions, to the Stores Issued Statements, and adjusted at the Head Office.

Scrap should not be allowed to develop into an unsightly heap, but should be cleared up at reasonable periods, according to the quantity accumulated and market prices. Materials returned to stock for re-issue are, of course, practically a debit to Stock Account, and a credit to the account which has

returned them, at a price according to the condition of the thing returned.

SCRAP MATERIAL BOOK.

Date received	Approximate Quantity	Description	SALES			
			Date	To whom sold	Description	Rate Amo
1912 Feb. 26	150 feet	Cable	1912 Mar. 27	John Jones	150 ft. Cable	Lot £ s d 4 0 0

The Board of Trade prescribed form of Revenue Account assumes that Renewals are charged to Revenue, less the amount received for any old material, which is the same, of course, as debiting Revenue Account with Renewals and crediting it with any Sales of old materials.

INVOICES.

Invoices are rendered by suppliers direct to the Head Office, where they may be entered in a Register as follows:—

REGISTER OF INVOICES.

Date of Invoice	Date Received	Name	Particulars	Order No.	Amount	Date handed to Engineer	Date Return'd
1912 Feb. 13	Feb. 11	J. Roberts ..	Bleached Wipers	246	£ s d 1 10 0	Feb. 12	Feb. 14
11	12	J. Williams & Co.	Special T Boxes	239	3 16 0	13	15

and issued to the Engineer or storekeeper, stamped with an indiarubber stamp as illustrated below,

INITIALS

1	Certified for quantity and quality of goods	
2	Entered in Stores Received Book, folio.....	
3	Priced	
4	Calculations, additions, and extensions	
5	Terms	
6	Reference to authority for expenditure	
7	Back Dates	
8	Certified by	

who is responsible for Items 1 and 2, and initials in the blank spaces accordingly, if correct. The invoices, when returned by the storekeeper, are "marked off" in the Head Office on the copy orders to which they refer, a copy of every order issued being filed in datal order in a book containing narrow slips of stiff paper, to which the copy orders are gummed or pasted. The clerk turns to the number of the order required, and checks it as regards Items 3, 4, 5, and 6. Opposite each of the items he inserts his initials, if correct. Item No. 7 is checked by the Accountant, and the last space is usually initialled by the Secretary, when the account is ready for payment. When the clerk checks an account with the copy order he (if it is in order) indicates on the order the amount and the date of the account, thus showing thereon what has been passed against the order. This is the meaning of "marking off."

All charges for Cases, Packing, Carriage, and Postage should be deducted, except where arranged to pay.

Accounts are usually paid monthly, the meetings of the board generally taking place once a month.

The form of docket accompanying each payment is as follows :—

February 6th 1912.

THE WROXHAM ELECTRIC LIGHTING COMPANY, LIM.
To JOHN JONES. Dr.

Date of Account	Particulars	Original Amount of Account	Amount passed	Deductions
1912 Jan. 2	Oils Less Discount at 2½%	£ s d 4 10 0 .. 0 2 1 £4 2 11	£ s d 4 5 0 0 2 1 £4 2 11	5/- for barrels
Checked	RECEIVED the sum of <u>Four</u> Pounds, <u>Two</u> Shillings, and <u>Eleven</u> Pence.			
Certified	£4 : 2s. : 11d. JOHN JONES.			

The accounts and dockets initialled by the Accountant, with the cheques signed by the Secretary, are entered in a book called the Cheque Agenda Book, which is in the following form :—

BOARD MEETING, January 6th 1912.

Directors' Initials		Name	Amount
C. N.	N. E. W.	John Jones.. .. .	£ s d 4 2 11
N. E. W.	C. N.	Wm. Thompson	10 9 8
		&c. &c.	

and when the accounts are passed by the board for payment the directors signing the cheques insert their initials in the first and second columns on the left-hand side of the book.

The invoices, after being paid, are stamped "Paid," and the folio of the Purchase Book indicated on them. They are then filed away in numerical order in boxes, labelled, say, "Accounts from January to March 1912."

The Vouchers should be inspected periodically, for the purpose of seeing that they are complete for the Auditor.

INWARD ACCOUNTS BOOK.

All accounts for purchases of General Stores, Materials, and Fuel are debited to Stock Account and Fuel Account respectively in the Impersonal Ledger by means of the Inward Accounts Book, and the different Personal Accounts in the Personal Ledger credited, the invoices certified by the Engineer being stamped "Stock."

Machinery and other similar purchases put into use at once are not included in the Stores Issued Statement, but are debited direct from the Inward Accounts Book to the account affected in the Impersonal Ledger, and the Personal Account credited, the invoices certified by the Engineer being stamped with the names of the accounts to which they should be allocated. Sundry other Inward Accounts not relating to purchases of stores and materials are also passed through the Inward Accounts Book.

The accounts are entered therein after having been checked, and the dockets and cheques have been prepared and attached to the accounts, the entries being posted to the Personal Accounts to which they relate in the Personal Ledger. The totals of the Allocation columns are posted monthly to the accounts concerned in the Impersonal Ledger by a Journal entry.

INWARD ACCOUNTS BOOK.

Date	Ledger Fo.	Name	Particulars	Voucher No.	Amount		Allocation																						
					£	s	d	Stores and Materials	Fuel	Motors	Buildings	Rents	Insurances	Office Furniture	Printing and Stationery	Audit Fees													
					£	s	d	£	s	d	£	s	d	£	s	d	£	s	d										
1912		James & James ..	Motor ..	1	2	0	0	..	..	50	0	0	..	..	..	..	..	..	..			
Jan. 1	5	Peter Thomas ..	Cartage of Ashes ..	2	5	0	0	..	5	0	0	..	..	..	..	..	..	..	..		
" 3	8	Do.	"	3	0	10	0	..	..	0	10	0	..	..	..	..	..	..	..			
" 5	10	J. Jones ..	Printing ..	4	0	7	6	2	0	0	..	0	7	6									
" 7	81	F. Thomas ..	Ground Rent ..	5	2	0	0	..	..	..	..	..	..	..	..	..	..	..	..
" 10	80	F. Thomas ..	Fire Insurance ..	6	4	10	0	..	..	..	..	..	..	..	..	..	..	..	..
" 13	82	T. Richardson ..	Coal ..	7	10	0	0	10	0	0	124	0	0	..	..	..	..	..	..				
" 14	79	M. Carter ..	Building Extension ..	8	12	0	0	..	..	..	..	..	50	0	0	..	..	..	..						
" 17	59	B. Right ..	Office Furniture ..	9	10	0	0	..	..	..	..	..	..	..	..	..	..	..	..
" 20	20	H. Hill ..	Audit Fee ..	10	11	6	0	0	..	..	..	..	..	..	..	..	..	..	..
" 21	33	T. West ..	Office Furniture ..	11	6	0	0	..	..	..	..	..	..	..	..	..	..	..	..
" 25	49	F. Yorker ..	Stationery ..	12	1	5	0	..	..	..	..	..	..	..	..	..	..	..	..
			Total ..	£	263	12	6	10	0	0	129	0	0	50	10	0	4	10	0	6	0	0	1	12	6	10	0	0	0

Note.—The titles of the account allocations are filled in as the accounts entered may require.

CHAPTER IV.

ALLOCATION OF STORES AND MATERIALS ISSUED.

At the end of each quarter the Engineer prepares Statements of Stores and Materials Issued and Chargeable to Revenue and Capital. The details are obtained from the Stores Issued Book, and the statements may be checked in the Head Office with the requisitions.

THE WROXHAM ELECTRIC

STATEMENT OF STORES AND MATERIALS ISSUED

Date	Requisition No.	GENERATION							
		Coal or other Fuel	Oil, Waste, and other Engine Room Stores	Water	Repairs and Maintenance				
					Buildings	Engines, Boilers, &c.	Dynamos	Other Machin'ry	Accumulators and Accessories
		A 1	A 2	A 3	A 6	A 7	A 8	A 9	A 10
		£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s
1912									
Jan. 2	19	..	1 10 6	..	..	..	..	..	..
3	20	..	0 7 0	..	..	..	..	..	..
4	21	..	..	..	3 17 0	..	0 15 0	..	..
5	22	..	0 14 0	..	..	..	..	..	..
6	23	..	4 0 0	..	..	..	..	5 0	..
7	24	87 12 4	0 10 0	..	..	2 18 0	..	..	..
9	25	..	..	..	0 12 6	..	..	..	2 0 0
Feb. 10	26	..	0 2 0	..	..	..	..	..	..
14	27	..	..	..	..	0 17 0	..	..	..
18	29	60 0 0	0 1 8	..	..	..	..	..	..
Mar. 20	30	..	..	..	..	..	..	0 19 8	..
24	31	..	..	..	..	4 17 2	..	..	1 12 6
27	32	..	0 2 3	..	..	..	..	..	..
28	..	65 0 0	..	..	..	..	..	..	..
				5 5 0	..	..	..	..	..
Total	..	£212 12 4	£7 7 5	£5 5 0	£4 9 6	£8 12 2	£0 15 0	£7 4 8	£3 12 6

SUMMARY.

	£ s d
Generation	250 15 4
Distribution	13 2 4
Public Lamps	5 18 8
Total	£369 16 4

LIGHTING COMPANY, LIM.

for the Quarter ended March 31st 1912.

A
Revenue

Station Lighting	Total Generation	DISTRIBUTION				PUBLIC LAMPS		
		Repairs and Maintenance				Repairs	Renewals	Total Public Lamps
		Mains and Services	Apparatus, Meters, Switches, &c.	Distributing Stations	Total Distribution			
A 11		B 3	B 4	B 5		PL 1	PL 2	
£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d
..	1 10 6	..	1 4 6	..	1 4 6	..	..	..
..	0 7 0	..	..	..	..	0 15 0	..	0 15 0
..	4 12 0	..	..	..	..	..	5 0 0	5 0 0
0 5 9	0 19 9	..	..	1 15 4	1 15 4	..	..	..
..	10 5 0	..	..	..	..	0 3 8	..	0 3 8
..	91 0 4	..	..	..	..	..	..	..
..	2 12 6	..	..	0 8 0	0 8 0	..	..	..
0 11 0	0 13 0	1 17 6	..	..	1 17 6	..	..	..
..	0 17 0	..	3 5 7	..	3 5 7	..	..	..
..	60 1 8	..	..	..	..	..	..	..
..	0 19 8	..	..	..	..	..	..	..
..	6 9 8	4 11 5	..	..	4 11 5	..	..	..
..	0 2 3	..	..	..	..	..	..	..
..	65 0 0	..	..	..	..	..	..	..
..	5 5 0	..	..	..	..	..	..	..
£0 16 9	£250 15 4	£6 8 11	£4 10 1	£2 3 4	£13 2 4	£0 18 8	£5 0 0	£5 18 8

Certified by TIMOTHY ATKINS, Managing Engineer.

The above Statement would be journalised as follows :—
JOURNAL.

Date	PARTICULARS	Ledger Folio	Dr.	Cr.
1912 Mar. 31	Generation Account		£ s d 212 12 4	£ s d
	To Fuel Account .. .. .		..	212 12 4
	For Fuel supplied during the Quarter ending 31st March 1912.			
"	Generation Account		7 7 5	
	To Stock Account .. .. .		..	7 7 5
	For Engine Room Stores and Materials supplied during the Quarter ending 31st March 1912.			
"	Generation Account		5 5 0	
	To Water Account .. .. .		..	5 5 0
	For Water supplied during the Quarter ending 31st March 1912.			
"	Buildings		4 9 6	
"	Engines and Boilers		8 12 2	
"	Dynamos		0 15 0	
"	Other Machinery		7 4 8	
"	Accumulators		3 12 6	
"	Station Lighting		0 16 9	
	To Stock Account .. .. .		..	25 10 7
	For Sundry Stores and Materials supplied to Generation, Repairs and Maintenance of Buildings, Plant, and Machinery during the Quarter ending 31st March 1912.			
"	Mains and Services		6 8 11	
"	Meters, Switches, &c.		4 10 1	
"	Distributing Stations		2 3 4	
	To Stock Account .. .. .		..	13 2 4
	For Sundry Stores and Materials supplied to Distribution, Repairs and Maintenance of Buildings, Plant, and Machinery during the Quarter ending 31st March 1912.			
"	Public Lamp Repairs		0 18 8	
"	Public Lamp Renewals		5 0 0	
	To Stock Account .. .. .		..	5 18 8
	For Sundry Stores and Materials supplied to Public Lamps for the Quarter ending 31st March 1912.			

The *pro forma* entries in the Impersonal Ledger would be as follow :—

Dr.	GENERATION.	Cr.
1912 Mar. 31	To Fuel " Engine Room " Stores " Water	£ s d 212 12 4 7 7 5 5 5 0
Dr.	BUILDINGS.	Cr.
1912 Mar. 31	To R. & M.	£ s d 4 9 6
Dr.	ENGINES AND BOILERS.	Cr.
1912 Mar. 31	To R. & M.	£ s d 8 12 2
Dr.	DYNAMOS.	Cr.
1912 Mar. 31	To R. & M.	£ s d 0 15 0
Dr.	OTHER MACHINERY.	Cr.
1912 Mar. 31	To R. & M.	£ s d 7 4 8
Dr.	ACCUMULATORS.	Cr.
1912 Mar. 31	To R. & M.	£ s d 3 12 6

ELECTRIC LIGHTING ACCOUNTS.

Dr. STATION LIGHTING. *Cr.*

1912 Mar. 31	To R. & M.	£ s d 0 16 9			
-----------------	------------------	-----------------	--	--	--

Dr. MAINS AND SERVICES. *Cr.*

1912 Mar. 31	To R. & M.	£ s d 6 8 11			
-----------------	------------------	-----------------	--	--	--

Dr. METERS, SWITCHES, &c. *Cr.*

1912 Mar. 31	To R. & M.	£ s d 4 10 1			
-----------------	------------------	-----------------	--	--	--

Dr. DISTRIBUTING STATIONS. *Cr.*

1912 Mar. 31	To R. & M.	£ s d 2 3 4			
-----------------	------------------	----------------	--	--	--

Dr. PUBLIC LAMPS (REPAIRS ACCOUNT). *Cr.*

1912 Mar. 31	To R. & M.	£ s d 0 18 8			
-----------------	------------------	-----------------	--	--	--

Dr. PUBLIC LAMPS (RENEWAL ACCOUNT). *Cr.*

1912 Mar. 31	To R. & M.	£ s d 3 0 0			
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ELECTRIC LIGHTING ACCOUNTS.

Dr. STORES AND MATERIALS ACCOUNT. *Cr.*

			1912 Mar. 31	By Generation ..	£ s d 7 7 5
				" Repairs and Main- tenance (Buildings and Machinery) ..	25 10 7
				" Do. (Distribution)..	13 2 4
				" Do. (Public Lamps)	5 18 8

Dr. FUEL ACCOUNT. *Cr.*

			1912 Mar. 31	By Generation.. ..	£ s d 212 12 4
--	--	--	-----------------	--------------------	-------------------

Dr. WATER ACCOUNT. *Cr.*

1912 Mar. 31	To Newton Water Co.	£ s d 5 5 0	1912 Mar. 31	By Generation.. ..	£ s d 5 5 0
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Dr. CASH BOOK. *Cr.*

			1912 Mar. 31	By Water Account ..	£ s d 5 5 0
--	--	--	-----------------	---------------------	----------------

THE WROXHAM ELECTRIC LIGHTING COMPANY, LIMITED.
STATEMENT OF STORES AND MATERIALS ISSUED during the Quarter ending March 31st 1912, and
Chargeable to Capital.

Date	Requisition No.	Lands	Buildings	Machinery	Accumulators	Mains and Cables	Transformers and Sub-Stations	Motors	Electrical Instruments	House Services	Tools	Meters and Indicators	Free Wiring	Public Lamps	Total
		C. 1	C. 2.	C. 3.	C. 4.	C. 5.	C. 6.	C. 7.	C. 8.	C. 9.	C. 10.	C. 11.	C. 12.	C. 13.	
1912 Jan. 4	48	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d
" 10	49	..	4 10 8	..	..	..	..	..	..	..	..	..	..	2 0 0	4 10 8
Feb. 11	50	..	3 7 6	..	5 0 0	..	..	..	..	..	..	..	..	..	5 7 6
" 21	51	..	..	..	..	..	..	..	..	..	..	..	..	..	5 0 0
Mar. 22	52	..	..	2 2 9	..	..	..	2 10 6	3 10 8	..	..	..	..	..	6 1 4
" 24	53	..	..	..	..	18 3 10	..	..	..	..	..	1 10 3	..	..	4 13 3
" 24	54	..	..	..	..	..	9 2 7	..	..	..	..	..	10 0 0	..	10 12 0
" 24	55	..	..	..	..	..	..	..	..	..	..	..	..	..	10 12 0
Total	..	..	£7 18 2	£2 2 9	£5 0 0	£18 3 10	£9 2 7	£2 10 6	£3 10 8	£2 10 8	..	£1 10 3	£10 0 0	£2 0 0	£64 9 5

Certified by TIMOTHY ATKINS, Engineer.

NOTE.—This supplemental summary is utilised for the purpose of indicating therein, as shown, particulars of any expenditure not authorised by the usual quarterly estimate, and is not to be taken as an estimate of the actual expenditure incurred, and compare it from time to time with the amount sanctioned. An account of all expenditure in respect of Job Numbers is kept in the Cost Ledger.

Job No. of Specific Work	Allocation Reference	Amount
J.N. 14	Buildings	£ s d
	Total	£7 18 2

The Journal entries would be as follows:—

Date	Particulars	Ledger Folio	Dr.	Cr.
1912 Mar. 31	Buildings	14	£ s d	£ s d
	Machinery	15	7 18 2	
	Accumulators	16	2 2 9	
	Mains and Cables	17	5 0 0	
	Transformers and Sub-Stations	18	18 3 10	
	Motors	19	9 2 7	
	Electrical Instruments	20	2 10 6	
	House Services	21	3 10 8	
	Meters and Indicators	22	2 10 8	
	Free Wiring	23	1 10 3	
	Public Lamps	24	10 0 0	
	To Stores and Materials Account	7	2 0 0	64 9 5
	For Sundry Stores and Materials issued and chargeable to Capital for the quarter ended the 31st March 1912.			

and the *pro formâ* Ledger entries—

Dr.	BUILDINGS.	Cr.
1912 Mar. 31	To Stores & Materials £ s d 7 18 2	
Dr.	MACHINERY.	Cr.
1912 Mar. 31	To Stores & Materials £ s d 2 2 9	
Dr.	ACCUMULATORS.	Cr.
1912 Mar. 31	To Stores & Materials £ s d 5 0 0	
Dr.	MAINS AND CABLES.	Cr.
1912 Mar. 31	To Stores & Materials £ s d 18 3 10	

<i>Dr.</i>		TRANSFORMERS AND SUB-STATIONS.				<i>Cr.</i>
1912 Mar. 31	To Stores & Materials	£	s	d		
		9	2	7		
<i>Dr.</i>		MOTORS.				<i>Cr.</i>
1912 Mar. 31	To Stores & Materials	£	s	d		
		2	10	6		
<i>Dr.</i>		ELECTRICAL INSTRUMENTS.				<i>Cr.</i>
1912 Mar. 31	To Stores & Materials	£	s	d		
		3	10	8		
<i>Dr.</i>		HOUSE SERVICES.				<i>Cr.</i>
1912 Mar. 31	To Stores & Materials	£	s	d		
		2	10	8		
<i>Dr.</i>		METERS AND INDICATORS.				<i>Cr.</i>
1912 Mar. 31	To Stores & Materials	£	s	d		
		1	10	3		
<i>Dr.</i>		FREE WIRING.				<i>Cr.</i>
1912 Mar. 31	To Stores & Materials	£	s	d		
		10	0	0		
<i>Dr.</i>		PUBLIC LAMPS.				<i>Cr.</i>
1912 Mar. 31	To Stores & Materials	£	s	d		
		2	0	0		

<i>Dr.</i>		STORES AND MATERIALS ACCOUNT.				<i>Cr.</i>
		1912 Mar. 31	By Capital Issues ..	£	s	d
				64	9	5

These Revenue and Capital Statements of Stores and Materials Issued should be carefully filed, as they will be required by the Auditor.

STOCKTAKING.

The stock is taken yearly. The quantity of each article in each recess, or other place of store, is compared with the stock exhibited by the Stores Cards, when these are in use, and which we have already explained. The value of the stock should agree with the total of the balances shown by the Stores Ledger, and the balance of the Stores and Materials Account in the Head Office Impersonal Ledger. This, however, is seldom the case, and it will be found in practice that allowance must be made for slight discrepancies. Very often a quantity discrepancy will be found in the Fuel Account, which will, of course, require adjustment, or some materials will be found to have been issued at an incorrect price, owing to the omission of a Credit Note, or other cause, and so on. It must be remembered that if the office supply of coal be drawn from the stock of fuel, such supply must be debited to General Establishment Charges, and not to Generation, every issue of Stores, Materials, Fuel, &c., being, of course, allocated to the purpose for which it is required.

It is very necessary that the Managing Engineer or store-keeper should keep a strict eye on the consumption of fuel, which should be weighed over to the stokers, and a proper note

signed by them indicating the quantity of coal so weighed over given to the storekeeper, countersigned by the Managing Engineer. If the fuel be delivered at the station by rail, care should be taken to have the wagons liberated promptly, and thus obviate demurrage. In large concerns it is the practice to keep a record in a small book of the dates of arrival of the wagons, and the dates that they are liberated.

No invoice for stores and materials should be entered in the Inward Accounts Book under the heading of "Stores and Materials," or "Stock," according to the title used, without its already being marked "Stock," which should be done by the storekeeper. Similarly in regard to fuel invoices, which should be marked Fuel or Stock, as the case may be. The Accountant should also take care to see that the folio of the Stores Received Book is inserted in all invoices for Stores, Material, Fuel, &c. The "Stores and Materials" and "Fuel" Accounts as recorded in the Inward Accounts Book, as well as the Stores Issues, should be compared from time to time with the Storekeeper's Ledger, and agreed therewith, particularly with a view to seeing that no issues are being charged out at higher than cost price.

It will be noticed that the stock requires to be set out in the Board of Trade prescribed form of Balance Sheet under the separate titles of—

- (1) Fuel.
- (2) Engine Room Stores (Oils, Waste, &c.).
- (3) General.

The stock will therefore probably require some dissection as between 2 and 3, which, however, is a simple matter.

The Stock (valued at cost) Statement for the Balance Sheet is signed by the storekeeper and countersigned by the Engineer.

The following is a usual form of Stock Statement :—

THE WROXHAM ELECTRIC LIGHTING COMPANY, LIM.

December 31st 1912.

We hereby certify that the stock of Stores and Materials and Fuel in hand at 31st December 1912 is as follows :—

Description	Quantity or Weight	Cost Price	Amount	Total
			£ s d	£ s d

JOHN JONES, *Storekeeper.*

TIMOTHY ATKINS, *Managing Engineer.*

It may be added that the value of the stock as shown by the Head Office books is arrived at in the usual way, viz. :—

Dr.		Cr.
	£ s d	£ s d
Stock on hand at commencement of period under review		Issues during the intervening period at cost price as per Stores Statements
Purchases during the intervening period as per invoices marked 'Stock'		Balance: Stock at cost price on hand at conclusion of period under review

CHAPTER V.

WAGES, SALARIES, &c

WAGES.

THE workmen are supplied with Time Sheets designed as follows:—

THE WROXHAM ELECTRIC LIGHTING COMPANY, LIM.

TIME SHEET.

For the week ended..... 19....

Day	Time Worked		No. of Hours actually worked	Particulars of Work Done, or Job Number	Rate	Amount	Allocation Reference	Remarks
	From	To						
Saturday ..						£ s d		
Sunday ..								
Monday ..								
Tuesday ..								
Wednesday								
Thursday ..								
Friday ..								

..... Signature of Workman.

..... Engineer.

† These columns are filled up by the Engineer.

ELECTRIC LIGHTING ACCOUNTS.

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Or:—

TIME SHEET, for the Week ending..... 19....

Name	Grade	No.		For Office only		Amount	£ s d
		Hours Worked	At Ordinary Rate	At Overtime Rate	Extra Pay		
	Cleaning & Requiring	Commenced Work at					
		Finished Work at					
		At Ordinary Rate					
		Without Extra Pay					
		At Overtime Rate					
		Allowance for Overtime					
		Hours to be paid for					
		Unloading Coal					
		Coal Trimming and Conveying					
		Stoking & Boiler Attendance, &c.					
		Drying & Engine Attendance, &c.					
		Attending.....					
		Engines					
		Boilers					
		Pumps					
Rotaries							
Dynamoes							
Transformers							
Other Machinery							
Engine Room							
Boiler House							
Other Jobs							
Totals ..							

Remarks

Rate of Pay per hour.

" " per week.

Calculated by.....

Certified by..... Engineer.

The Time Sheets, after being checked, are entered in the Wages Pay Bill Book, as follows:—
 THE WROXHAM ELECTRIC LIGHTING COMPANY, LIM.
 WAGES PAY BILL for the week ending 7th January 1912.

No.	Name	Grade	Sat.	Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Total Time	Rate	Amount	Friendly Society Deductions	Amount Payable
1	John Strong.	Engineman	..	..	..	..	..	..	..	..	£ s d	1 12 6	s d	1 12 6
2	William Bone	Do.	..	..	..	..	..	..	..	..	1 11 6	0 9	..	1 10 9
3	Robert Blow	Stoker	..	..	..	..	..	..	..	..	1 5 0	0 7	..	1 4 3
4	Peter Short..	Do.	..	..	..	..	..	..	..	..	1 5 0	0 7	..	1 4 3
5	James Naylor	Fitter	..	..	..	..	..	..	..	..	1 10 0	0 9	..	1 9 3
6	George Peters	Switch Board Attendant	..	..	..	..	..	..	..	..	1 2 6	0 6	..	1 2 0
7	Robert Nicholson	Do.	..	..	..	..	..	..	..	..	1 1 0	0 6	..	1 0 6
8	Stephen Thomson	Joiner	..	..	..	..	..	..	..	..	1 10 0	0 9	..	1 9 3
9	Edward North	Do.	..	..	..	..	..	..	..	..	1 10 0	0 9	..	1 9 3
10	Nicholas Crompton	Wireman	..	..	..	..	..	..	..	..	1 9 6	0 9	..	1 8 3
11	Joseph Black	Do.	..	..	..	..	..	..	..	..	0 18 6	0 6	..	0 18 0
12	John Vasey	Wireman's Mate	..	..	..	..	..	..	..	..	0 18 9	0 6	..	0 18 3
13	John Vasey	Do.	..	..	..	..	..	..	..	..	0 18 0	0 6	..	0 17 6
14	Thomas Nevins	Lamp-lighter	..	..	..	..	..	..	..	..	0 19 0	0 6	..	0 17 0
15	Sidwell Flynn	Labourer	..	..	..	..	..	..	..	..	0 17 6	0 6	..	0 17 0
16	James Connor	Do.	..	..	..	..	..	..	..	..	0 10 0	0 6	..	0 10 0
17	Alfred Jones	Boy	..	..	..	..	..	..	..	..	0 8 6	..	..	0 8 6
18	William B. Smith	Stoker	..	..	..	..	..	..	..	..	1 5 6	0 7	..	1 4 11
19	William B. Smith	Assistant Shift Engineer	..	..	..	..	..	..	..	..	1 15 0	0 10	..	1 14 2
20	Peter Thomasin	neer	..	..	..	..	..	..	..	..	£24 14 3	11 1	..	£24 3 2
21														

TIMOTHY ATKINS,

Managing Engineer.

When the workmen contribute to a friendly or other society, and as a matter of convenience the contributions are deducted by the company from their wages, the company periodically sending a cheque to the society for the contributions so deducted, such deductions do not, of course, affect the amount of wages to be allocated. For instance, supposing that the total of column 6 in the Wages Pay Bill Book is, say, £25 for a certain week, and that the total net amount payable as per column 8 is £20, Wages Account would, of course, be debited with £25, Cash credited with £20, and the society credited with £5. When the company remitted the contributions to the society, Cash would be credited and the society debited therewith. The Time Sheets and Pay Bill Book are handed in to the Head Office, where they are checked by the Accountant. The workmen and other employees sign for their wages or salary a form of receipt as follows:—

.....19 .
 RECEIVED.....Pounds.....Shillings,
 and.....Pence, $\frac{\text{Salary}}{\text{Wages}}$ for the $\frac{\text{Month}}{\text{Week}}$ ended
19
 £ s. d.Signature.

Every month the wages are analysed and allocated under the titles named in the Allocation Table to Capital and Revenue, the allocations being journalised quarterly.

THE WROXHAM ELECTRIC
WAGES ANALYSIS for the Month

Week ending	GENERATION								
	Coal	Generation	Repairs and Maintenance						Total Generation
			Buildings	Engines, Boilers, &c.	Dynamoes, &c.	Other Machinery	Accum- ulators, &c.	Station Lighting	
	A. 1.	A. 5.	A. 6.	A. 7.	A. 8.	A. 9.	A. 10.	A. 11.	
Jan. 7	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d
14	..	7 0 0	..	5 0 0	..	0 19 8	..	..	12 19 8
21	1 0 0	6 10 0	2 5 0	..	0 10 0	1 0 0	..	0 19 7	12 4 7
28	0 15 0	6 15 0	..	4 0 0	..	1 0 0	..	..	12 2 6
				2 0 0	0 5 6	..	1 0 0	0 8 4	11 3 10
Total..	£1 15 0	£27 7 6	£2 5 0	£11 0 0	£0 15 6	£2 19 8	£1 0 0	£1 7 11	£48 10 7

SUMMARY.

Generation	..	..	..	£ s d
Distribution	..	..	..	48 10 7
Public Lamps	..	..	..	14 14 0
Total	..	..	..	£65 5 1

LIGHTING COMPANY, LIM.
ended 31st January 1912.

A
Revenue.

DISTRIBUTION					PUBLIC LAMPS		
Distribution	Repairs and Maintenance			Total Distribution	Repairs	Renewals	Total Public Lamps
	Mains	Apparatus on Consumer's Premises	Distributing Stations				
B. 2	B. 3.	B. 4.	B. 5.		P.L. 1.	P.L. 2.	
£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d
1 0 0	1 0 0	0 19 0	1 15 0	4 14 0	0 7 6	..	0 7 6
1 15 0	0 10 0	..	..	2 5 0	..	..	..
2 0 0	1 0 0	1 0 0	0 10 0	4 10 0	0 3 0	..	0 3 0
2 0 0	0 15 0	0 10 0	..	3 5 0	..	1 10 0	1 10 0
£6 15 0	£3 5 0	£2 9 0	£2 5 0	£14 14 0	£0 10 6	£1 10 0	£2 0 6

Certified by TIMOTHY ATKINS, Engineer.

The Journal entries would be as follows:—

Date	Particulars	Ledger Folio	Dr.	Cr.
1912 Jan. 31	Fuel		£ s d	£ s d
	Generation		1 15 0	
	Buildings		27 7 6	
	Engines and Boilers		2 5 0	
	Dynamos		11 0 0	
	Other Machinery		0 15 6	
	Accumulators		2 19 8	
	Station Lighting		1 0 0	
	Distribution		1 7 11	
	Mains		6 15 0	
	Apparatus on Consumer's Premises		3 5 0	
	Distributing Stations		2 9 0	
	Public Lamp Repairs		2 5 0	
	Public Lamp Renewals		0 10 6	
	Public Lamp Renewals		1 10 0	
	To Wages Account			65 5 1
	For Wages paid for the month ended the 31st January 1912.			

Pro forma Ledger Entries.

Dr.		WAGES.		Cr.	
1912 Jan. 31	To Cash	£ s d 65 5 1	1912 Jan. 31	By Fuel	£ s d 1 15 0
				" Generation	27 7 6
				" Buildings	2 5 0
				" Engines and Boilers	11 0 0
				" Dynamos	0 15 6
				" Other Machinery	2 19 8
				" Accumulators	1 0 0
				" Station Lighting	1 7 11
				" Distribution	6 15 0
				" Mains	3 5 0
				" Apparatus on Consumer's Premises	2 9 0
				" Distributing Stations	2 5 0
				" Public Lamp Repairs	0 10 6
				" Do Renewals	1 10 0
		£ 65 5 1			£ 65 5 1
Dr.		FUEL.		Cr.	
1912 Jan. 31	To Wages	£ s d 1 15 0			

Dr. GENERATION. Cr.

1912 Jan. 31	To Wages	£ s d 27 7 6			
-----------------	------------------	-----------------	--	--	--

Dr. BUILDINGS. Cr.

1912 Jan. 31	To Wages	£ s d 2 5 0			
-----------------	------------------	----------------	--	--	--

Dr. ENGINES AND BOILERS. Cr.

1912 Jan. 31	To Wages	£ s d 11 0 0			
-----------------	------------------	-----------------	--	--	--

Dr. DYNAMOS. Cr.

1912 Jan. 31	To Wages	£ s d 0 15 6			
-----------------	------------------	-----------------	--	--	--

Dr. OTHER MACHINERY. Cr.

1912 Jan. 31	To Wages	£ s d 2 19 8			
-----------------	------------------	-----------------	--	--	--

Dr. ACCUMULATORS. Cr.

1912 Jan. 31	To Wages	£ s d 1 0 0			
-----------------	------------------	----------------	--	--	--

Dr. STATION LIGHTING. Cr.

1912 Jan. 31	To Wages	£ s d 1 7 11			
-----------------	------------------	-----------------	--	--	--

Dr.		DISTRIBUTION.		Cr.	
1912 Jan. 31	To Wages	£ s d			
		6 15 0			
Dr.		MAINS.		Cr.	
1912 Jan. 31	To Wages	£ s d			
		3 5 0			
Dr.		APPARATUS ON CONSUMER'S PREMISES.		Cr.	
1912 Jan. 31	To Wages	£ s d			
		2 9 0			
Dr.		DISTRIBUTING STATIONS.		Cr.	
1912 Jan. 31	To Wages	£ s d			
		2 5 0			
Dr.		PUBLIC LAMPS—REPAIRS.		Cr.	
1912 Jan. 31	To Wages	£ s d			
		0 10 6			
Dr.		PUBLIC LAMPS—RENEWALS.		Cr.	
1912 Jan. 31	To Wages	£ s d			
		1 10 0			

THE WROXHAM ELECTRIC LIGHTING COMPANY, LIM.

B
Capital.

WAGES ANALYSIS for the Month ended January 31st 1912.

Month	Buildings	Machin- ery	Accumu- lators	Mains and Cables	Trans- formers	Motors	Electrical Instru- ments	House Services	Tools	Meters	Free Wiring	Public Lamps	Total
	C 2	C 3	C 4	C 5	C 6	C 7	C 8	C 9	C 10	C 11	C 12	C 13	£ s d
1912 Jan. 7	£ s d 1 0 0	£ s d 0 14 0	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d 1 10 0	£ s d	£ s d	£ s d 2 0 0	£ s d	£ s d 5 4 0
14	0 19 6	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	0 9 6	1 9 0
28	1 10 0	0 12 0	0 9 0	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	1 0 0	.. ..	3 11 0
Total	£3 9 6	£1 6 0	£0 9 0	.. ..	.. ..	.. ..	.. ..	£1 10 0	.. ..	.. ..	£3 0 0	£0 9 6	£10 4 0

Certified by TIMOTHY ATKINS, Managing Engineer.

See Note on Stores and Materials Issued
and chargeable to Capital Statement, which
applies similarly to Wages Analysis chargeable
to Capital.

Job No.	Account Allocation	Amount £ s d

The Journal entries would be:—

Date	Particulars	Ledger-Folio	Dr.	Cr.
1912 Jan. 31	Buildings	14	£ s d 3 9 6	£ s d
	Machinery	15	1 6 0	
	Accumulators	16	0 9 0	
	Public Lamps	24	0 9 6	
	Free Wiring	23	3 0 0	
	House Services	21	1 10 0	
	To Wages Account	11		10 4 0
	For Wages paid during the four weeks ended 28th January 1912, and chargeable to Capital.			

SALARIES.

The salaries are allocated similarly to that of wages. The amount of the Office Salaries Pay Bill is, of course, credited in the General Cash Book, and posted to the debit of Salaries Account in the Impersonal Ledger. At the end of each quarter the Salaries Account is treated by a Journal entry as follows:—

	Dr.	Cr.
Management Expenses—	£ s d	£ s d
Secretary's, &c., Salaries	127 10 0	
Collectors' Salaries	15 0 0	
To Salaries Account...		142 10 0
For Office Salaries for the Quarter ended 31st March 1912.		

THE WROXHAM ELECTRIC LIGHTING COMPANY, LIM. SALARIES PAY BILL for the month of January 1912.

Name	Position	Rate per annum	Amount Due
Robinson, J.	Secretary	£ 250	£ s d 20 16 8
Cash, W.	Accountant	150	12 10 0
James, R.	Clerk	60	5 0 0
Thomson, B.	Collector	60	5 0 0
Lewins, M.	Junior Clerk	52	4 3 4
Total ..			£47 10 0

JOHN ROBINSON,
Secretary.

ALLOCATION.—MANAGEMENT EXPENSES:—

F. 2. Salaries of Secretary, &c.	£ s d 42 10 0
F. 3. Salaries of Collectors	5 0 0
	£47 10 0

The Station or Electricity Works Pay Bill is similarly treated.

The amount of the Pay Bill is credited in the General Cash Book and posted to the debit of Salaries Account in the Impersonal Ledger. At the end of each quarter the amount is dissected, and transferred by a Journal entry to the proper account, *e.g.*:—

	Dr.	Cr.
	£ s d	£ s d
Generation	11 6 8	
Distribution	4 0 0	
Managing	12 10 0	
Buildings (Capital)	2 0 0	
Machinery (Capital)	1 0 0	
To Salaries Account		30 16 8
For proportion of Station Salaries chargeable to Revenue and Capital, for the Quarter ending March 31st 1912.		

THE WROXHAM ELECTRIC LIGHTING COMPANY, LIM.
SALARIES PAY BILL for the Month of January 1912.

Name	Position	Annual Salary	Salary due	ACCOUNT ALLOCATION					
				Revenue			Capital		
				Genera- tion	Distri- bution	Managing	Buildings	Machinery	
		£	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d
Atkins, Timothy	Managing Engineer	150	12 10 0	..	..	12 10 0	..	..	..
Brown, William	Superintendent	120	10 0 0	5 0 0	2 0 0	..	2 0 0	1 0 0	..
Evans, Robert	Engineer	100	8 6 8	6 6 8	2 0 0	..	..	..	..
		Total	£30 16 8	11 6 8	4 0 0	12 10 0	2 0 0	1 0 0	..

Certified by **TIMOTHY ATKINS, Managing Engineer.**

NOTE.—Any Capital Expenditure in respect of work to which a Job Number has been given is indicated in the Supplemental Summary.

Job No.	Amount
	£ s d

The Supplemental Summaries at the foot of the Stores, Wages, and Salaries (Capital) Statements are entered in what may be termed the Cost Ledger, which may be in the following form, space being allotted to each job number :—

COST LEDGER.

Particulars of Work, &c.....
 Date of Minutes.....
 Amounts Authorised.....

Total £.....

Date	Entered from	Particulars	Plant and Machinery	Materials	Wages	Salaries	Sundries	Other Expenditure	Credits
			£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d

Any other expenditure not appearing in the statement mentioned, and chargeable to job number, must be noted for inclusion therein.

OTHER BOOKS OF ACCOUNT.

In treating of the allocation of stores and materials issued, wages paid, &c., we have utilised the services of the Journal, which, as will have been gathered, is much in evidence in the proper record of Electric Lighting Accounts. The remaining books of account in use are the General Cash Book, Petty Cash Book, Bills Receivable and Bills Payable Books, Sundry Sales Journal, Sundry Sales Ledger, and Consumers' Books. The General Cash Book may be designed as follows, or in the ordinary form as may be preferred.

GENERAL CASH BOOK.

Dr.

Date	Ledger Fo.	Particulars	Voucher No.	Discount	Private Consumers	Public Lighting	Motors	Current	Rentals or Hire			Other Receipts	Total	Bank
				£ s d	£ s d	£ s d	£ s d		Meters	Fittings	Motors	£ s d	£ s d	£ s d
1912 Jan. 1		To Sundries												
19 Jan. 10		" J. Nicholls	2	.. ..	5 0 0	.. ..	.. ..		0 2 6	0 5 0	.. ..	.. ..	.. ..	4,000 0 0
20		" Wm. Johnson	3	1 0 0	.. ..	.. ..	.. ..		.. ..	.. ..	.. ..	10 0 0	.. ..	5 7 6
21		" Earton U.D.C.	4	.. ..	.. ..	60 0 0	.. ..		.. ..	.. ..	.. ..	.. ..	.. ..	9 0 0
														60 0 0

Cr.

Date	Ledger Fo.	Particulars	Voucher No.	Discount	Stock	Other Payments	Total	Bank
				£ s d	Stores and Materials	Fuel	£ s d	£ s d
1912 Jan. 6		By John Jones	2	2 0 0	£ s d	£ s d	£ s d	£ s d
7		" Wm. Jones	3	.. ..	.. ..	.. ..	.. ..	48 0 0
9		" Robert Smith, Printing and Stationery	4	.. ..	102 0 0	.. ..	.. ..	100 0 0
10		" J. Newton & Co., Motors	5	.. ..	.. ..	.. ..	.. ..	5 0 0
								50 0 0

The principles of the General Cash Book are that all receipts and payments recorded therein affect the Bank Account, which is kept only in the General Cash Book, all receipts being banked and all payments made by cheque. The receipts are recorded on the *Dr.* side, and the payments on the *Cr.* side, the former being posted to the credit, and the latter to the debit, of the affected Ledger Accounts. At the end of each month the General Cash Book is balanced, reconciled with the Bank Pass Book, and ruled off.

The Discount columns are treated as follows:—The total of the discounts on the *Dr.* side are entered in the Discount column on the *Cr.* side under the title of Discount, whilst the total discounts on the *Cr.* side are entered in the Discount column on the *Dr.* side under the title Discount, thus balancing the two Discount columns, the entry on the *Dr.* side being posted to the credit side, and that on the *Cr.* side to the debit side of Discount Account in the Ledger.

The majority of the receipt entries on the *Dr.* side will be vouched by the Auditors with the counterfoils of the Receipt Book, and the payments on the *Cr.* side with the vouchers, which should be carefully numbered and filed in numerical order ready for the Auditor.

It will be seen that special inner columns are provided on the *Dr.* side for the record of receipts for current rentals and hire, and "other receipts," whilst on the *Cr.* side there are also special inner columns provided for the record of payments in respect of the two principal Stock Accounts, and for "other payments."

Petty Cash Book.—

The usual practice is to draw in the first instance a cheque for a round sum of, say, £25 upon the bank, which is credited in the Bank column of the General Cash Book, and debited in the Petty Cash Book. At varying periodical times for the total payments made out of the petty cash a cheque is drawn, thus restoring to Petty Cash Account the round sum drawn, which sum, both at the commencement and at the end of the financial year, is always maintained.

The form of the Petty Cash Book is as follows :—

PETTY CASH BOOK.

Dr.	G. C. B. folio	Date	Particulars	Voucher No.	Cr.	ALLOCATION					
						Printing and Stationery	General Establishment Charges	Rents	Rates	Insurance	Office Furniture
£ s d					£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d
25 0 0	6	1912 Jan. 1	To Bank ..	1	£ 25 0 0						
		3	By John Jones, Printing ..	2	0 18 6	0 18 6					
		4	" " Stationery ..	3	1 0 0		1 0 0				
		7	" " Office Cleaning ..	4	0 7 6		0 7 6				
		9	" " W. Alder, Travelling Expenses ..	5	1 10 0		1 10 0				
		10	" " J. Mold, Wages ..	6	0 8 0		0 8 0				
		12	" " Wm. Newton & Co., 2 Ledgers ..	7	0 18 6	0 18 6					
		14	" " Mark & May, Ground Rates ..	8	0 15 0			0 15 0			
		15	" " The National Insurance Co. ..	9	1 0 0			1 0 0			
		16	" " Registration Fees ..	10	0 15 0				0 15 0		
		17	" " Walton & Co., Ad- ..	11	1 10 6		1 10 6				
		18	" " J. Jones, Stationery ..	12	1 5 0		1 5 0				
		19	" " Robert Jackson, ..	13	0 10 0	0 10 0					
		25	" " Office Furniture ..	14	1 7 6						1 7 6
		28	" " Teas ..	15	0 5 0		0 5 0				
		31	To Bank ..	16	3 3 0		3 3 0				
			By J. Jones, Printing ..	17	15 11 0		15 11 0				
			" " Balance ..	18							
12 9 6	7				£ 37 9 6	£ 37 9 6					
15 11 0		1912 Feb. 1	To Balance ..			£ 15 4 0	£ 15 4 0	£ 10 15 0	£ 1 0 0	£ 0 15 0	£ 1 7 6

Every quarter the allocations of the Petty Cash Book should be posted by a Journal entry to the proper accounts in the Impersonal Ledger, *e.g.* :—

		Dr.	Cr.
		£ s d	£ s d
1912			
March 31	Printing and Stationery	3 10 0	
	General Establishment Charges	30 2 0	
	Rents	3 0 0	
	Rates	1 0 0	
	Insurances	1 0 0	
	Office Furniture (Capital Account)	1 7 6	
	To Petty Cash Account		39 61 6
	For Petty Expenditure as per Petty Cash Book during the three months, January, February, and March 1912.		

The Petty Cash Account in the Ledger is debited with the amounts drawn from the bank for petty cash purposes as per credits in the General Cash Book, and credited with the expenditure shown by the Petty Cash Book, the balance representing the amount of Petty Cash on hand.

The Bills Receivable and Bills Payable Books recording Bills of Exchange are of the usual type, the Bills Receivable being entered in the Bills Receivable Book, and posted to the credit of the Personal Accounts concerned in the Ledger, and Bills Receivable Account debited. When discounted, or paid into the bank for collection, the bank is debited (Bank column in the General Cash Book), and Bills Receivable Account credited.

Bills Payable are entered in the Bills Payable Book when accepted, which is posted to the debit of the Personal Accounts affected in the Ledger, the double entry being completed by a credit to Bills Payable Account. When honoured, the bank is credited (Bank column in the General Cash Book) and Bills Payable Account debited.

The following are usual forms of the Bills Receivable and Payable Books :—

BILLS RECEIVABLE BOOK.

No.	Date Received	Drawee	Drawer	Account of	Where Payable	Date of Bill	Currency	Ledger Folio	Amount	Due Date	Date and manner of disposal	Remarks
1	1912 Jan. 7	J. Duke ..	The Company	Drawee ..	N.P. Bank Newton	1912 Jan. 4	1 month	3	£ s d 350 0 0 .. 7	January	January	

BILLS PAYABLE BOOK.

No.	Date of Acceptance	Drawer	Drawee	Account of	Where Payable	Date of Bill	Currency	Ledger Folio	Amount	Date Re-turned	Remarks
1	1912 Jan. 12	R. Roberts..	The Company	Drawer ..	Newton (Banking Co., Wroxham)	1912 Jan. 7	2 mos.	4	£ s d 125 0 0 .. 10	1912 Jan. 13	

SUNDRY SALES JOURNAL.

Date	Sundry Sales Ledger	To whom Chargeable	Address	Particulars	Sales		Work done at Cost				Amount charged and posted to Sundry Sales Ledger
					Cost	£ s d	Materials	Wages	Sundries	Total	
						£ s d	£ s d	£ s d	£ s d	£ s d	£ s d

SUNDRY SALES LEDGER (TABULAR FORM).

Folio of Sundry Sales Journal	Name	Address	Arrears	Amount Charged	Date of Payment	Amount Paid	Arrears	Remarks
				£ s d		£ s d	£ s d	

Sundry Sales.—

Special returns are made monthly of articles or materials sold, or for materials used, and wages incurred in respect of work done chargeable to private parties. Where such sales are of moment, they should be entered in a Sundry Sales Journal (details being supplied by the Managing Engineer), and the entries posted to a Sundry Sales Ledger.

At the end of each month the wages under the head of Sundry Sales are journalised by a credit to Wages Account and a debit to Sundry Sales Account, the article sold or materials supplied in connection with work done being journalised by a debit to Sundry Sales Account and a credit to Stock. The total of the Sundry Sales Journal (Amount Charged column) is debited to Sundry Sales Ledger Account and credited to Sundry Sales Account. The latter shows the profit made, and at the end of the financial year is closed by a Journal entry debiting Sundry Sales Account and crediting Revenue therewith. The payments received in respect of Sundry Sales are debited in the General Cash Book and posted to the credit of Sundry Sales Ledger Account in the Ledger, which account shows the amount outstanding (if any), and forms, of course, a sundry debtor.

The accounts for the supply of electrical energy, rent of meters, motors, &c., are usually rendered quarterly, and the form of account is as below :—

WROXHAM,

March 31st 1912.

MR. A. JONES, Wroxham.

To THE WROXHAM ELECTRIC LIGHTING COMPANY, LIM., Dr.

For Electrical Energy for the Quarter ending March 31st 1912.
(See Meter Card for readings.)

Lighting by Meter—

		£	s	d
98	Board of Trade units at 7d. per unit ..	2	17	2
86	" " " 2d. " ..	0	14	4
	" " " " " ..			

Total No. of units 184

Motors—

Board of Trade units at	per unit ..
" " "	" "

Total No. of units

Rental of	Meter ..	..	..	..	0	4	6
Do.	do. ..	..	..	..
Do.	Motors ..	..	..	..
Do.	do. ..	..	..	..
Do.	Fittings, &c. ..	..	..	..	0	3	6

Purchases—

Fees—

Amount Due for Quarter .. £3 19 6

Note.—Parts of a unit not exceeding half a unit will not be charged. Parts of a unit exceeding half a unit will be charged as a full unit.

Receipt.

.....19..

No.....

Received of

Due

Received by.....

£ : :

THE WROXHAM ELECTRIC LIGHTING CO., LIM.

No.....

.....Date

Received from
the sum of pounds
..... shillings pence
as per account rendered.

Received by

£ : :

The form of Meter Card referred to in the account, and which is retained by the consumer, and filled up by the Inspector quarterly, when he reads the meter and indicator, is as follows:—

THE WROXHAM ELECTRIC LIGHTING COMPANY, LIM.

METER CARD.

No Meter No..... Size.....
Name
Address Dem. Ind. Size

Date	Meter Index	Difference	Constant	Units Consumed	Indicator Reading	Max. C. Recorded	Inspector	Remarks

whilst the Inspector fills up the customer's account of consumption in a book in the following form:—

METER BOOK.

No.....
Name Dem. Ind. No..... Size.....
Address Size of Service
Date Connected..... Size of Fuse
Wired by..... Test
Meter No. Size Tested by

Date	Meter Index	Difference	Constant	Units Consumed	Indicator Reading	Max. C. Recorded	Inspector	Remarks

which he hands in to the Head Office, and from which, after inspection, the necessary Consumers' Accounts are prepared.

The following form is also submitted:—

No. of Consumer 19
Name W. J. Smith

Address Dene House, Dene Road
No. of Lighting Meter ..
No. of Power ..
No. of Meter ..

No. of 8 C.P.
F. W. Lamps

Size.....Amps.....Volts.
Size.....Amps.....Volts.

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ELECTRIC LIGHTING ACCOUNTS.

Date	Meter Readings			Units Chargeable			Rents			Quarters Charges		
	Lighting	Power	Special	Lighting	Power	At.....	Motors	Free Wiring	Special	Lighting Units @ 6	Power Units @ 3	Special Units @ 3
1909										£ s d	£ s d	£ s d
Oct. 13	956	0	..	49	10					3 2 0	0 7 6	0 2 6
Nov. 5	1005	10	..	75	20					..	0 2 6	0 2 0
Jan. 4	1080	30	..	124	30					..	..	..
										Quarter Total ..		3 14 0
Feb. 2	1125	..	..	45						Lighting Units @ 6	2 16 6	
Mar. 4	1163	..	..	38						Power Units @ 3	..	0 2 6
Apr. 1	1193	R.S.O.	..	30						Special " "	..	..
										Meter Rents ..	..	..
										Other " "	..	..
				113						Quarter Total ..		2 19 0
June 3	40	..	..	40						Lighting Units @ 6		
										Power " "	..	..
										Special " "	..	..
										Meter Rents ..	..	..
										Other " "	..	..
										Quarter Total ..		
										Lighting Units @ 6		
										Power " "	..	..
										Special " "	..	..
										Meter Rents ..	..	..
										Other " "	..	..
										Quarter Total ..		

The following are forms of Consumers' Lighting and Power Books :—

CONSUMERS' LIGHTING ACCOUNT BOOK.

Lighting Accounts for the Quarter ending.....19 ..

ELECTRIC LIGHTING ACCOUNTS.

No.	Name	Address	Units Consumed		Total	Average price per Unit	Net Charge for Current	Rental of Hire of		Fees	Total Amount of Account rendered	Arrears brought forward	Total Amount owing	Account Paid		Bad Debts	Arrears carried forward
			@ ..d.	@ ..d.				Meters	Fittings					Date	Amount		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
A	Private Consumers			£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d
B	Public Lighting																

Or it may be in the following form :—

ELECTRIC LIGHTING ACCOUNTS.

No.	Name	Folio Meter Register	QUARTER ENDING MARCH 19 .									
			Debit					Credit				
			Arrears	Electrical Energy	Meter Rentals	Installation Rentals	Total	Date	Remittances Allowed	Discounts Allowed	C.B. Fd.	Amount Carried Forward
			£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d		£ s d

The ruling may be extended for the June, September, and December quarters.

ELECTRIC LIGHTING ACCOUNTS.

MOTOR ACCOUNTS BOOK.

MOTOR ACCOUNTS FOR THE QUARTER ENDING.....19.....

No.	Name	Address	Units consumed		Total	Average Price per Unit	Net Charge to Current	Rental or Hire of			Fees	Total Amount of Account rendered	Arrears brought forward	Total Amount owing	Account Paid			Allowances	Bad Debts	Arrears carried forward
			@.	.d.				Meters	Motor	Date					Amount	Receipt No.				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
				£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	

Note.—Where it is the practice to allow Discounts, a column should be provided for recording them.

The Bookkeeping treatment is as follows :—

Private Consumers.—

Total of Column 7.	Credit Private Consumers' Current Account.
	Debit Private Consumers' Account.
" "	8. Credit Rental of Meters Account.
	Debit Private Consumers' Account.
" "	9. Credit Rental of Fittings Account.
	Debit Private Consumers' Account.
" "	11. Credit Fees Account.
	Debit Private Consumers' Account.

Public Lighting.—

For Public Lighting individual Personal Accounts are usually raised.

Total of Column 7.	Credit Public Lighting Current Account.
	Debit the Personal Account.
" "	8. Credit Rental of Meters Account.
	Debit the Personal Account.
" "	9. Credit Rental of Fittings Account.
	Debit the Personal Account.
" "	11. Credit Fees Account.
	Debit the Personal Account.

Motors.—

Total of Column 7.	Credit Motor Current Account.
	Debit Consumers' (Motor) Account.
" "	8. Credit Rental of Meters Account.
	Debit Consumers' (Motor) Account.
" "	9. Credit Rental of Motors Account.
	Debit Consumers' (Motor) Account.
" "	11. Credit Fees Account.
	Debit Consumers' (Motor) Current Account.

The Cash received will be debited in the Cash Book, and posted to the credit of any of the following accounts to which it refers :—

- (1) Private Consumers' Account.
- (2) Public Lighting Personal Accounts.
- (3) Consumers' (Motor) Account.

Where the rental, or hire of fittings, wiring, &c., is included in the price of the current the usual practice is to credit the individual or collective Personal Account with the total. Strictly, however, the total amount should be dissected, and the proportion due to rental or hire credited to that account. Similarly in regard to motors.

In the case of the hire-purchase of fittings, wiring, &c. (separately charged in the accounts rendered) debit Private Consumers' Account, or other account, credit Capital Account with its due proportion, and credit any profit to Hire Purchase Fittings Account, the latter being transferred to the credit of Revenue Account. Similarly in regard to motors.

In the case of the hire-purchase of fittings, wiring, &c. (included in the price of the current), debit Private Consumers' Account, or other account, Capital Account, and Revenue Account with their proportions. Similarly in regard to motors.

CHAPTER VI.

STATEMENTS FOR DIRECTORS.

THE statements prepared by the Accountant for submission at the monthly meetings of the board are :—

- (1) Accountant's Report, accompanied by Bank Certificates.
- (2) Capital Commitments.
- (3) Power House Expenses and Receipts.

The Accountant's Report, which may be designed in different forms, exhibits no special feature, and will be readily understood from the following illustration :—

THE WROXHAM ELECTRIC POWER SUPPLY & LIGHTING
COMPANY, LIM.

ACCOUNTANT'S REPORT TO THE BOARD, on the 12th March 1912.

From 7th February to 7th March 1912.

Bank Balances as reported at last Meeting	£	s	d	£	s	d
Receipts since paid into Bank, viz. :—				6,000	0	0
Lighting	1,500	0	0			
Power	500	0	0			
Sundry Sales	25	0	0			
Rental of Meters	17	0	0			
Rental of Motors	10	0	0			
Charging Batteries	5	0	0			
				2,057	0	0
Payments since out of Bank, viz. :—				8,057	0	0
Cheques not presented at date of last Meeting	100	0	0			
Cheques signed at last Meeting	200	0	0			
Cheques signed since last Meeting	150	0	0			
	450	0	0			
Less Cheques now outstanding	50	0	0			
				400	0	0
Balance as per Bank Pass Books, and Certificates at 7th inst.				7,657	0	0
Add Cash not credited				200	0	0
				7,857	0	0
Deduct Cheques not presented.. .. .				50	0	0
				£7,807	0	0
Balance as per Cash Book						
The Cheques signed since last Meeting, Nos. 400 to 445, amounted in total as per Cheque Agenda Book to	150	0	0			
Accounts for payment amounting to	578	0	0			
As per Cheque Agenda Book have been examined, and it is recommended that Cheques 446 to 480 be now signed in payment thereof.						
The Financial position is as under :—						
Cash Balance as above				7,807	0	0
Deduct Cheques drawn to-day				578	0	0
				7,229	0	0
Add on Deposit with Bank				9,000	0	0
				£16,229	0	0

W. CASH, Accountant.

THE WROXHAM ELECTRIC POWER SUPPLY AND LIGHTING COMPANY, LIM.

CAPITAL ESTIMATES AND COMMITMENTS to 14th January 1912.

Date of Minute of Agree-ment	Particulars	Original Estimate	Additions to Original Estimate	Total Amount Sanctioned	Reductions in Actual Cost	Amount Discharged to 14th Jan. 1912	Amount Undischarged
		£ s d	£ s d	£ s d	£ s d	£ s d	£ s d
1912							
Oct. 6	Land	8,000 0 0	..	8,000 0 0	..	1,000 0 0	7,000 0 0
7	Buildings	10,000 0 0	500 0 0	10,500 0 0	..	2,000 0 0	8,500 0 0
7	Machinery and Plant— 2,100 K. W. Generating Sets..	2,500 0 0	..	2,500 0 0	..	1,000 0 0	1,500 0 0
7	Accumulators	1,000 0 0	..	1,000 0 0	..	..	1,000 0 0
	Total	£21,500 0 0	£500 0 0	£22,000 0 0	..	£4,000 0 0	£18,000 0 0

Wm. CASH, Accountant.

STATEMENT OF POWER HOUSE
For Quarter ending
EXPENSES.

Description	Amount	Per Unit Sold		
		This Quarter	Previous Corresponding Quarter	Last Quarter
GENERATION:—	£ s d			
Fuel	70 0 0	'861		
Oil, Waste, Water, and Engine Room Stores	10 0 0	'123		
Salaries	8 0 0	'098		
Wages	60 0 0	'738		
R. & M. Buildings, &c.	0 15 0	'009		
" Engines, &c.	5 2 6	'063		
" Dynamos	0 6 10	'004		
" Other Machinery	1 2 1	'013		
" Accumulators	0 7 10	'004		
" Stations and Lighting	0 12 0	'007		
Total Generation	£156 6 3	1'920		
DISTRIBUTION:—				
Salaries	7 10 0	'092		
Wages	10 0 0	'123		
R. & M. Mains	9 0 0	'110		
" Apparatus on Consumers' Premises	4 10 0	'055		
" Distributing Stations	0 10 0	'006		
Total Distribution	£31 10 0	'386		
PUBLIC LAMPS:—				
Repairs	0 10 0	'006		
Renewals	1 0 0	'012		
Total Public Lamps	£1 10 0	'018		
MANAGEMENT AND GENERAL EXPENSES:—				
Directors' Remuneration	10 0 0	'123		
Salaries	30 0 0	'615		
Collectors	13 0 0	'160		
Stationery and Printing	0 10 0	'006		
General Establishment Charges	5 0 0	'061		
Auditors of Company	10 0 0	'123		
Board of Trade Auditor	3 0 0	'036		
Law Expenses	0 6 8	'004		
Rents	1 2 0	'013		
Rates and Taxes	20 0 0	'246		
Total Management and General Expenses	£112 18 8	1'387		
Total Cost for Quarter	302 4 11	3'719		
Total Cost of previous Quarter .. .. .	..	..
Total Cost to Date	£302 4 11	3'719		

EXPENSES AND RECEIPTS.

31st March 1912.

RECEIPTS.

Description	Amount	Per Unit Sold		
		This Quarter	Previous Corresponding Quarter	Last Quarter
	£ s d			
Sale of Current Lighting	525 0 0	7'000		
" " Power	15 0 0	3'600		
" " Public Lighting	10 0 0	4'800		
Rental of Meters	40 0 0			
" Motors	20 0 0			
Sundry other Receipts	10 0 0			
NO. OF UNITS SOLD:—	Units			
Lighting	18'000			
Power	1'000			
Public Lighting	5'000			
Total	19'500			
	£620 0 0	7'630		
Total Receipts for Quarter	620 0 0	7'630		
Total of previous Quarter .. .. .	..	..
Total Receipts to Date	£620 0 0	7'630		

QUARTERLY STATISTICS for Quarter ending 31st March 1912.

1.—Plant capacity in K.W., including accumulators to date ..	300
2.—Maximum Demand in K.W. on Power Station	75
3.—Total K.W. connected to date	200
4.—8 C.P. (35 Watt) Equivalent	4,000
5.—Maximum Demand on Feeders	65
6.—Sum of Consumers' Maximum Demands	95
7.—Load Factor $\frac{\text{Units sold} \times 100}{\text{Max. Demand} \times \text{Hours}} = \frac{19500 \times 100}{60 \times 2184}$..	14.87
8.—Total Units Generated	22,000
9.—Total Units used in Works	500
10.—Diversity Factor $\frac{\text{Sum of Consumers' Max. Dem.}}{\text{Max. Dem. on Feeders}} =$..	1.46
11.—Total Units sold	19,500
12.—Total Units unaccounted for	2,000

The following Form may be used for Generation Records :—

		This year	Corresponding period last year	Remarks	
Units Generated					
Units Received					
Units Sold—					
To (a.c.)					
To (d.c.)					
Total Sold					
Units used on Works—					
Coal Handling					
Stoker Motors					
General Power					
Feed Pumps					
Condenser Pumps					
Lighting					
Battery Losses					
Balancers and Boosters					
Testing					
Total used					
Units Lost—					
On Supply to					
On Supply to					
Total Lost					
Efficiency % Last Week					

Particulars of Expenditure	Stores	Wages	Total	Pence per Unit Gen.		Pence per Unit Sold	
				This week	Last week	This week	Last week
Tons at	£ s d	£ s d	£ s d				
Tons at							
Tons at							
Less Sale of Ashes							
Oil, Waste, & Engine Room Stores							
Water 1,000 gallons at per 1,000							
Salaries							
Wages							
R. and M. Buildings							
Engines and Boilers							
Dynamos							
Other Machinery							
Accumulators							
Station Lighting							
Total Generation Costs							

Maximum Loads—					
On Station K.W.				Water evaporated lbs.	
On Willesden Feeders K.W.				Do. used for blowing down, &c. lbs.	
On Feeders K.W.				Do. Total through Feed Meter	
On Feeders K.W.				Lbs. Water per lb. Coal (actual)	
Certified by				Do. do. f. & a 212°	
Engineer.				Water evaporated per Unit generated... lbs.	
				Coal consumed per Unit generated... lbs.	

CHAPTER VII.

DEPRECIATION AND RENEWALS.

THE Board of Trade prescribed form of Revenue Account provides for depreciation in respect of—

- (1) Leasehold Works,
- (2) Buildings,
- (3) Plant and Machinery,

such provision being debited against Revenue as well as Renewals.

Depreciation, if it has occurred, or if it is occurring, is a loss, and should be treated by a debit to Revenue and a credit to the asset affected. This is the usual practice where accounts are kept on what is termed the Single-Account System; but in accounts kept on the Double-Account System, the record is effected by creating a Depreciation Account (termed in the Board of Trade form a Depreciation Fund Account), which is credited with the sum written off, and Revenue debited. The Capital Account (which is quite a distinct account from the Balance Sheet, and which, by the way, excludes "Preliminary Expenses," the latter being separately indicated in the Balance Sheet) records on the debit side the capital expenditure to date, and on the credit side the capital receipts, the balance only being carried to the Balance Sheet. It may be remarked, however, that the only difference between the Double-Account

System and the Single-Account System is purely that of form, as any accounts framed on the former system show the same result if converted to the latter, and *vice versa*.

The following percentages in cost may be taken as general rates for the depreciation of electrical buildings and plant:—

Buildings	..	...	...	...	...	2½
Meters	...	...	...	...	...	7½
Instruments	...	...	...	...	...	7½
Accumulators	...	...	...	...	...	10
Engines and Boilers	...	...	...	...	...	7½ to 10
Mains and Cables	...	...	...	...	...	5
Dynamos	...	...	...	...	...	7½
Turbines	...	...	...	...	...	7½
Transformers	...	...	...	...	...	7½ to 10
Tools	...	...	...	...	...	10
Motors	...	...	...	...	...	7½

SET OF PRO FORMA TRANSACTIONS.

- (1) Balance Sheet for opening entries.
- (2) Journal.
- (3) Cash entries.
- (4) Ledger.
- (5) Trial Balance.
- (6) Revenue Account.
- (7) Balance Sheet.
- (8) Auditors' Certificates (Company and Board of Trade).
- (9) Accounts set out in Board of Trade form.

12.4.11
BALANCE SHEET OF THE WROXHAM ELECTRIC LIGHTING COMPANY, LIM.,
AT 31ST DECEMBER 1911. *12.4.11*

		£	s	d
To SHARE CAPITAL:	<i>Authorised:—</i>			
	5,000 Cumulative Preference Shares of £10 each	50,000	0	0
	5,000 Ordinary Shares of £10 each	50,000	0	0
		<u>£100,000</u>	0	0
<i>Issued:—</i>	2,500 Cumulative Preference Shares of £10 each fully-paid	£25,000	0	0
	3,000 Ordinary Shares of £10 each fully-paid	30,000	0	0
		<u>55,000</u>	0	0
		5,500	0	0
Sundry Creditors	Depreciation and Renewal Fund	7,000	0	0
	" Net Revenue Account, Net Revenue at 31st December 1912	6,000	0	0
		<u>£73,500</u>	0	0
By Capital Expenditure on Works	Shop of Stores and Materials	47,500	0	0
	" Sundry Debtors	550	0	0
	" Preliminary Expenses	8,000	0	0
	" Investments	300	0	0
	" Cash at Bank on Deposit	7,000	0	0
	" Do.	..	£6,000	0
	" Current Account	..	4,000	0
	" Petty Cash	..	..	..
		<u>10,000</u>	0	0
				30
				£73,500 0 0

NET REVENUE ACCOUNT.

	£	s	d		£	s	d
To Dividend at 6% on Preference Shares	1,300 0 0		..	..	..
Do. at 6% on Ordinary Shares	1,500 0 0		..	..	..
" Amount carried forward	2,700 0 0		..	..	..
					£6,000	0 0	
					£6,000	0 0	
					£6,000	0 0	

ANALYSIS OF CAPITAL EXPENDITURE.

EXPENDITURE ON WORKS at 31st December 1911.

Lands	£6,000
Buildings	7,400
Engines, &c.	12,000
Accumulators	2,000
Other Machinery	3,000
Mains	10,000
Motors	500
Meters	1,500
Office Furniture and Fittings	50
Instruments	150
Tools	30
Provisional Order	5,000

£47,630

JOURNAL.

1912		£	s	d	£	s	d
Jan. 1	Sundries Dr.	55,000	0	0			
	To Ordinary Share Capital Account				30,000	0	0
	Preference Share Capital Account				25,000	0	0
	For Share Capital subscribed to date.						
	Sundries Dr.	5,500	0	0			
	To Sundry Creditors				5,500	0	0
	For Sundry Creditors at this date.						
	Sundries Dr.	2,700	0	0			
	To Net Revenue Account				2,700	0	0
	For Balance carried forward.						
	Sundries Dr.	3,300	0	0			
	To Dividend Account (Ordinary Shares)				1,800	0	0
	Do. (Preference Shares)				1,500	0	0
	For Dividend for the year 1911.						
	Sundries Dr.	7,000	0	0			
	To Depreciation and Renewal Fund				7,000	0	0
	For amount of Fund at 31st December 1911.						
	Lands Dr.	6,000	0	0			
	Buildings	7,400	0	0			
	Engines, &c.	12,000	0	0			
	Accumulators	2,000	0	0			
	Other Machinery	3,000	0	0			
	Mains	10,000	0	0			
	Motors	500	0	0			
	Meters	1,500	0	0			
	Office Furniture and Fittings	50	0	0			
	Instruments	150	0	0			
	Tools	30	0	0			
	Provisional Order	5,000	0	0			
	To Sundries				47,630	0	0
	For Capital Expenditure to 31st December 1911.						

JOURNAL—continued.

1912		£	s	d	£	s	d
Jan. 1	Stock of Stores and Materials Dr.	550	9	0			
	Preliminary Expenses	300	0	0			
	Sundry Debtors	8,000	0	0			
	Bank (Current Account)	4,600	0	0			
	(Deposit Account)	6,900	0	0			
	Investments	7,000	0	0			
	Petty Cash	20	0	0			
	To Sundries				25,870	0	0
	For Sundry Assets at 31st December 1911.						
Feb. 10	Preference Dividend Account Dr.	75	0	0			
	Ordinary Dividend Account	90	0	0			
	To Income Tax Account				165	0	0
	For Income Tax deducted from dividends payable for the year ending 31st December 1911.						
Dec. 31	Capital, viz.: Dr.						
	Buildings	50	0	0			
	Engines	10	0	0			
	Accumulators	25	0	0			
	Other Machinery	15	0	0			
	Public Lamps	4	0	0			
	Mains	100	0	0			
	Motors	50	0	0			
	Meters	10	0	0			
	Tools	10	0	0			
	To Stock Account				274	0	0
	For Stores and Materials issued during year ending 31st December 1912, and chargeable to Capital.						
	(In practice these charges would be journalised quarterly.)						
	Capital, viz.: Dr.						
	Buildings	75	0	0			
	Engines	15	0	0			
	Accumulators	20	0	0			
	Other Machinery	30	0	0			
	Public Lamps	10	0	0			
	Mains	70	0	0			
	Motors	10	0	0			
	Meters	10	0	0			
	Instruments	10	0	0			
	To Wages Account				250	0	0
	† For Wages allocated to Capital during year ending 31st December 1912.						
	Capital, viz.: Dr.						
	Buildings	15	0	0			
	Engines, &c.	10	0	0			
	Other Machinery	20	0	0			
	Mains	15	0	0			
	Motors	5	0	0			
	To Salaries Account				65	0	0
	† For proportion of Salaries allocated to Capital during the year ending 31st December 1912.						

† In practice these charges would be journalised Quarterly.

JOURNAL.—continued.

1912 Dec. 31		£ s d	£ s d
	Repairs and Maintenance:— <i>Dr.</i>		
	Buildings	10 0 0	
	Engines	20 0 0	
	Dynamos	10 0 0	
	Other Machinery	5 0 0	
	Apparatus on Consumer's Premises	12 0 0	
	Accumulators	2 0 0	
	Station Lighting	2 0 0	
	Public Lamps	2 0 0	
	Mains	15 0 0	
	To Stock Account		78 0 0
	† For Stores and Materials issued during year ending 31st December 1912 and chargeable to Revenue.		
	Repairs and Maintenance:— <i>Dr.</i>		
	Buildings	5 0 0	
	Engines	15 0 0	
	Dynamos	12 0 0	
	Other Machinery	5 0 0	
	Apparatus on Consumer's Premises	3 0 0	
	Accumulators	2 0 0	
	Public Lamps	1 0 0	
	Station Lighting	4 0 0	
	Mains	20 0 0	
	To Wages Account		67 0 0
	† For proportion of Wages allocated to these accounts during the year ending 31st December 1912.		
	Revenue, viz.:— <i>Dr.</i>		
	Management (Salaries)	500 0 0	
	Generation	150 0 0	
	Distribution	70 0 0	
	Other Machinery	10 0 0	
	Dynamos	5 0 0	
	To Salaries Account		735 0 0
	† For proportion of Salaries allocated to these accounts during the year ending 31st December 1912.		
	Stock of Stores and Materials.. .. . <i>Dr.</i>	900 0 0	
	Fuel	1,800 0 0	
	Stationery and Printing	40 0 0	
	Engines (Capital)	20 0 0	
	Law Charges	12 0 0	
	Insurances	2 0 0	
	Rates and Taxes	120 0 0	
	Rents	50 0 0	
	Directors' Fees	100 0 0	
	Auditors' Fees	20 0 0	
	General Establishment Charges	120 0 0	
	To Sundry Creditors		3,184 0 0
	For Sundry Purchases and Charges as per Inward Accounts Book for the year ending 31st December 1912.		
	(In practice journalised monthly.)		

† In practice these charges would be journalised Quarterly.

JOURNAL.—continued

1912 Dec. 31		£ s d	£ s d
	Generation <i>Dr.</i>	2,600 0 0	
	To Fuel Account		1,700 0 0
	To Wages		600 0 0
	To Stock		300 0 0
	† For value of Engine Room Stores, &c., supplied, and proportion of Wages chargeable to Generation for the year ending 31st December 1912.		
	Distribution <i>Dr.</i>	100 0 0	
	To Wages Account		100 0 0
	† For proportion of Wages allocated to Distribution during the year ending 31st December 1912.		
	General Establishment Charges	5 0 0	
	To Fuel Account		5 0 0
	† For value of Coal supplied during the year ending 31st December 1912, for Office purposes, &c.		
	Sundry Debtors <i>Dr.</i>	10,197 0 0	
	To Current Account—Private Consumers.. .. .		7,000 0 0
	Do. Public Lighting		1,000 0 0
	Do. Motors		2,000 0 0
	Rental of Meters		75 0 0
	Motors		120 0 0
	Test Fees		2 0 0
	(In practice journalised Quarterly.)		
	General Establishment Charges <i>Dr.</i>	100 0 0	
	To Petty Cash Account		100 0 0
	For Petty Cash Expenses during the year ending 31st December 1912.		
	(In practice journalised Quarterly.)		
	Sundry Sales Account <i>Dr.</i>	40 0 0	
	To Wages		25 0 0
	To Stock		15 0 0
	For Wages incurred and Stores issued on Works chargeable to private parties.		
	(In practice journalised Monthly.)		
	Sundry Debtors <i>Dr.</i>	350 0 0	
	To Dividends, &c., Account		350 0 0
	For Dividends due on Investments, and Interest on Deposit, &c.		
	Rates and Taxes <i>Dr.</i>	100 0 0	
	Stock	75 0 0	
	To Sundry Creditors		175 0 0
	For Accounts due to the period and owing at the 31st December 1912.		

† In practice these charges would be journalised Quarterly.

JOURNAL—continued.

1912 Dec. 31		£	s	d	£	s	d
	Sundries Dr.	858	0	0	858	0	0
	To Stock Account						
	For Stock on hand at 31st December 1912.						
	Sundries Dr.	95	0	0	95	0	0
	To Fuel Account.. .. .						
	For Stock on hand at 31st December 1912.						
	Revenue Dr.	4,249	0	0			
	To Buildings				15	0	0
	Engines				35	0	0
	Dynamos				27	0	0
	Other Machinery				20	0	0
	Apparatus				15	0	0
	Accumulators				4	0	0
	Station Lighting				6	0	0
	Mains				35	0	0
	Public Lamps				3	0	0
	Management				500	0	0
	Generation				2,750	0	0
	Distribution				170	0	0
	Stationery and Printing				40	0	0
	Law Charges				12	0	0
	Insurances				2	0	0
	Rates and Taxes				220	0	0
	Rents				50	0	0
	Auditors' Fees				20	0	0
	Directors' Fees				100	0	0
	General Establishment Charges				225	0	0
	For Revenue Expenditure transferred to Revenue Account at 31st December 1912.						
	Income Tax Account Dr.	165	0	0			
	To Sundry Creditors				165	0	0
	Dividends Dr.	350	0	0			
	Private Consumers	7,000	0	0			
	Public Lighting... .. .	1,000	0	0			
	Motors	2,000	0	0			
	Rental of Meters	75	0	0			
	Motors	120	0	0			
	Test Fees	2	0	0			
	To Revenue Account				10,547	0	0
	For Revenue for the year ending December 31st 1912, receivable by the company.						
	Net Revenue Account (1911) Dr.	2,700	0	0			
	To Net Revenue Account				2,700	0	0
	For Amount carried forward transferred.						
	Sundry Sales Ledger Account.. .. . Dr.	50	0	0			
	To Sundry Sales Account				50	0	0
	For Amount charged for Work done for Private Parties, &c., during the year ending 31st December 1912.						
	Sundry Sales Account Dr.	10	0	0			
	To Revenue Account				10	0	0
	For Profit on Sundry Sales.						

The General Cash Book entries, summarised, are :—

<i>Dr.</i>				<i>CASH BOOK.</i>				<i>Cr.</i>							
				<i>£</i>	<i>s</i>	<i>d</i>					<i>£</i>	<i>s</i>	<i>d</i>		
To Sundries	4	000	0	0	By Sundry Creditors ..	..	..	..	7	000	0	0
„ Sundry Debtors	16	000	0	0	„ Ordinary Share Dividend Account .. ..	..	..	..	1	710	0	0
								„ Preference Share Dividend Account .. ..	..	..	..	1	425	0	0
								„ Petty Cash .. ..	..	..	..	100	0	0	0
								„ Wages .. ..	..	..	..	1	042	0	0
								„ Salaries .. ..	..	..	..	800	0	0	0
								„ Balance .. ..	..	..	..	7	923	0	0
												</			

LEDGER.

Dr.		ORDINARY SHARE CAPITAL.			Cr.	
		1912 Jan. 1	By Sundries ..	£ 30,000	s 0	d 0

<i>Dr.</i>	PREFERENCE SHARE CAPITAL.				<i>Cr.</i>
		1912 Jan. 1	By Sundries ..	£ 25,000	s d 0 0

Dr.		SUNDRY CREDITORS.				Cr.			
1912		£	s	d	1912		£	s	d
Dec. 31	To Cash	7,000	0	0	Jan. 1	By Sundries ..	5,500	0	0
	" Balance ..	2,024	0	0	Dec. 31	" Do. ..	3,184	0	0
						" Do. ..	175	0	0
						" Do. ..	165	0	0
		<u>£9,024</u>	<u>0</u>	<u>0</u>			<u>£9,024</u>	<u>0</u>	<u>0</u>
					1913				
					Jan. 1	By Balance ..	2,024	0	0

Dr.		NET REVENUE (1911).		Cr.	
1912 Dec. 31	To Net Revenue (1912)	£ s d 2,700 0 0	1912 Jan. 1	By Sundries ..	£ s d 2,700 0 0

Dr.		ORDINARY SHARE DIVIDEND.		Cr.	
1912 Feb. 10	To Cash ..	£ s d 1,710 0 0	1912 Jan. 1	By Sundries ..	£ s d 1,800 0 0
	" Income Tax..	90 0 0			
		£1,800 0 0			£1,800 0 0

Dr.		PREFERENCE SHARE DIVIDEND.		Cr.	
1912 Feb. 10	To Cash ..	£ s d 1,425 0 0	1912 Jan. 1	By Sundries ..	£ s d 1,500 0 0
	" Income Tax..	75 0 0			
		£1,500 0 0			£1,500 0 0

Dr.		DEPRECIATION AND RENEWAL FUND.		Cr.	
			1912 Jan. 1	By Sundries ..	£ s d 7,000 0 0

Dr.		PUBLIC LAMPS—CAPITAL.		Cr.	
1912 Dec. 31	To Wages ..	£ s d 10 0 0	1912 Dec. 31	By Balance ..	£ s d 14 0 0
	" Stock ..	4 0 0			
		£14 0 0			£14 0 0

Dr.		LANDS—CAPITAL.		Cr.	
1912 Jan. 1	To Sundries ..	£ s d 6,000 0 0	1912 Dec. 31	By Balance ..	£ s d 6,000 0 0

Dr.		BUILDINGS—CAPITAL.		Cr.	
1912 Jan. 1	To Sundries ..	£ s d 7,400 0 0	1912 Dec. 31	By Balance ..	£ s d 7,540 0 0
Dec. 31	" Stock ..	50 0 0			
	" Wages ..	75 0 0			
	" Salaries ..	15 0 0			
		£7,540 0 0			£7,540 0 0

Dr.		ENGINES—CAPITAL.		Cr.	
1912 Jan. 1	To Sundries ..	£ s d 12,000 0 0	1912 Dec. 31	By Balance ..	£ s d 12,055 0 0
Dec. 31	" Stock ..	10 0 0			
	" Wages ..	15 0 0			
	" Salaries ..	10 0 0			
	" Sundry Creditors ..	20 0 0			
		£12,055 0 0			£12,055 0 0

Dr.		ACCUMULATORS—CAPITAL.		Cr.	
1912 Jan. 1	To Sundries ..	£ s d 2,000 0 0	1912 Dec. 31	By Balance ..	£ s d 2,065 0 0
Dec. 31	" Stock ..	25 0 0			
	" Wages ..	20 0 0			
	" Salaries ..	20 0 0			
		£2,065 0 0			£2,065 0 0

Dr.		OTHER MACHINERY—CAPITAL.		Cr.	
1912 Jan. 1	To Sundries ..	£ s d 3,000 0 0	1912 Dec. 31	By Balance ..	£ s d 3,045 0 0
Dec. 31	" Stock ..	15 0 0			
	" Wages ..	30 0 0			
		£3,045 0 0			£3,045 0 0

Dr.		MAINS—CAPITAL.		Cr.	
1912 Jan. 1	To Sundries ..	£ s d 10,000 0 0	1912 Dec. 31	By Balance ..	£ s d 10,185 0 0
Dec. 31	" Stock ..	100 0 0			
	" Wages ..	70 0 0			
	" Salaries ..	15 0 0			
		£10,185 0 0			£10,185 0 0

Dr.		MOTORS—CAPITAL.		Cr.	
1912		£	s	d	
Jan. 1	To Sundries ..	500	0	0	
Dec. 31	" Stock ..	50	0	0	
	" Wages ..	10	0	0	
	" Salaries ..	5	0	0	
		£565	0	0	
				£565	0

Dr.		PRELIMINARY EXPENSES.		Cr.	
1912		£	s	d	
Jan. 1	To Sundries ..	300	0	0	

Dr.		SUNDRY DEBTORS.		Cr.	
1912		£	s	d	
Jan. 1	To Sundries ..	8,000	0	0	
Dec. 31	" Do. ..	10,197	0	0	
	" Dividends on Investments ..	350	0	0	
		£18,547	0	0	
1913					£18,547
Jan. 1	To Balance ..	2,547	0	0	

Dr.		BANK—DEPOSIT ACCOUNT.		Cr.	
1912		£	s	d	
Jan. 1	To Sundries ..	6,000	0	0	

Dr.		INVESTMENTS.		Cr.	
1912		£	s	d	
Jan. 1	To Sundries ..	7,000	0	0	

Dr.		PETTY CASH.		Cr.	
1912		£	s	d	
Jan. 1	To Sundries ..	20	0	0	
Dec. 31	" Bank ..	100	0	0	
		£120	0	0	
1913					£120
Jan. 1	To Balance ..	20	0	0	

Dr.		INCOME TAX.		Cr.	
1912		£	s	d	
Dec. 31	To Sundry Creditors ..	165	0	0	
				£165	0

Dr.		METERS—CAPITAL.		Cr.	
1912		£	s	d	
Jan. 1	To Sundries ..	1,500	0	0	
Dec. 31	" Stock ..	10	0	0	
	" Wages ..	10	0	0	
		£1,520	0	0	
				£1,520	0

Dr.		OFFICE FURNITURE AND FITTINGS.		Cr.	
1912		£	s	d	
Jan. 1	To Sundries ..	50	0	0	

Dr.		INSTRUMENTS—CAPITAL.		Cr.	
1912		£	s	d	
Jan. 1	To Sundries ..	150	0	0	
Dec. 31	" Wages ..	10	0	0	
		£160	0	0	
				£160	0

Dr.		TOOLS—CAPITAL.		Cr.	
1912		£	s	d	
Jan. 1	To Sundries ..	30	0	0	
Dec. 31	" Stock ..	10	0	0	
		£40	0	0	
				£40	0

Dr.		PROVISIONAL ORDER.—CAPITAL.		Cr.	
1912		£	s	d	
Jan. 1	To Sundries ..	5,000	0	0	

Dr. STOCK OF STORES AND MATERIALS. *Cr.*

1912			1912		
Dec. 31			Dec. 31		
To Sundries ..	£	s d	By Capital Issues	£	s d
" Sundry	550	0 0	" Revenue do..	274	0 0
" Creditors..	900	0 0	" Generation ..	300	0 0
" Do. ..	75	0 0	" Sundry Sales		
			" Account ..	15	0 0
			" Stock ..	858	0 0
				£1,525	0 0
1913					
Jan. 1	To Stock ..	858			
		0 0			

Dr. WAGES. *Cr.*

1912			1912		
Dec. 31			Dec. 31		
To Bank ..	£	s d	By Capital ..	£	s d
	1,042	0 0	" Revenue ..	250	0 0
			" Generation ..	67	0 0
			" Distribution ..	600	0 0
			" Sundry Sales		
			" Account ..	25	0 0
				£1,042	0 0

Dr. SALARIES. *Cr.*

1912			1912		
Dec. 31			Dec. 31		
To Bank ..	£	s d	By Capital ..	£	s d
	800	0 0	" Revenue ..	65	0 0
			" Revenue ..	735	0 0
				£800	0 0

Dr. BUILDINGS—REVENUE. *Cr.*

1912			1912		
Dec. 31			Dec. 31		
To Stock	£	s d	By Revenue Account	£	s d
" Wages ..	10	0 0		15	0 0
	5	0 0			
	£15	0 0		£15	0 0

Dr. ENGINES—REVENUE. *Cr.*

1912			1912		
Dec. 31			Dec. 31		
To Stock ..	£	s d	By Revenue Account	£	s d
" Wages ..	20	0 0		35	0 0
	15	0 0			
	£35	0 0		£35	0 0

Dr. DYNAMOS—REVENUE. *Cr.*

1912			1912		
Dec. 31			Dec. 31		
To Stock ..	£	s d	By Revenue Account	£	s d
" Wages ..	10	0 0		27	0 0
" Salaries..	12	0 0			
	5	0 0			
	£27	0 0		£27	0 0

Dr. OTHER MACHINERY—REVENUE. *Cr.*

1912			1912		
Dec. 31			Dec. 31		
To Stock ..	£	s d	By Revenue Account	£	s d
" Wages ..	5	0 0		20	0 0
" Salaries..	5	0 0			
	10	0 0			
	£20	0 0		£20	0 0

Dr. APPARATUS ON CONSUMERS' PREMISES—REVENUE. *Cr.*

1912			1912		
Dec. 31			Dec. 31		
To Stock ..	£	s d	By Revenue Account	£	s d
" Wages ..	12	0 0		15	0 0
	3	0 0			
	£15	0 0		£15	0 0

Dr. ACCUMULATORS—REVENUE. *Cr.*

1912			1912		
Dec. 31			Dec. 31		
To Stock ..	£	s d	By Revenue Account	£	s d
" Wages ..	2	0 0		4	0 0
	2	0 0			
	£4	0 0		£4	0 0

Dr. STATION LIGHTING—REVENUE. *Cr.*

1912			1912		
Dec. 31			Dec. 31		
To Stock ..	£	s d	By Revenue Account	£	s d
" Wages ..	2	0 0		6	0 0
	4	0 0			
	£6	0 0		£6	0 0

Dr.			MAINS—REVENUE.			Cr.		
1912 Dec. 31	To Stock	£ s d 15 0 0	1912 Dec. 31	By Revenue Account	£ s d 35 0 0			
	" Wages	20 0 0						
		<u>£35 0 0</u>			<u>£35 0 0</u>			
Dr.			PUBLIC LAMPS—REVENUE.			Cr.		
1912 Dec. 31	To Stock	£ s d 2 0 0	1912 Dec. 31	By Revenue Account	£ s d 3 0 0			
	" Wages	1 0 0						
		<u>£3 0 0</u>			<u>£3 0 0</u>			
Dr.			MANAGEMENT SALARIES.			Cr.		
1912 Dec. 31	To Salaries	£ s d 500 0 0	1912 Dec. 31	By Revenue Account	£ s d 500 0 0			
Dr.			GENERATION.			Cr.		
1912 Dec. 31	To Salaries	£ s d 150 0 0	1912 Dec. 31	By Revenue Account	£ s d 2,750 0 0			
	" Fuel	1,700 0 0						
	" Wages	600 0 0						
	" Materials, &c ..	300 0 0						
		<u>£2,750 0 0</u>			<u>£2,750 0 0</u>			
Dr.			DISTRIBUTION.			Cr.		
1912 Dec. 31	To Salaries	£ s d 70 0 0	1912 Dec. 31	By Revenue Account	£ s d 170 0 0			
	" Wages	100 0 0						
		<u>£170 0 0</u>			<u>£170 0 0</u>			
Dr.			FUEL.			Cr.		
1912 Dec. 31	To Sundry Creditors	£ s d 1,800 0 0	1912 Dec. 31	By Generation ..	£ s d 1,700 0 0			
				" General Estab. ..				
				" Charges	5 0 0			
				" Stock	95 0 0			
		<u>£1,800 0 0</u>			<u>£1,800 0 0</u>			
1913 Jan. 1	To Stock	95 0 0						

Dr.		STATIONERY AND PRINTING.		Cr.	
1912 Dec. 31	To Sundry Creditors	£ s d 40 0 0	1912 Dec. 31	By Revenue Account	£ s d 40 0 0

Dr.		LAW CHARGES.		Cr.	
1912 Dec. 31	To Sundry Creditors	£ s d 12 0 0	1912 Dec. 31	By Revenue Account	£ s d 12 0 0

Dr.		INSURANCES.		Cr.	
1912 Dec. 31	To Sundry Creditors	£ s d 2 0 0	1912 Dec. 31	By Revenue Account	£ s d 2 0 0

Dr.		RATES AND TAXES.		Cr.	
1912 Dec. 31	To Sundry Creditors	£ s d 120 0 0	1912 Dec. 31	By Revenue Account	£ s d 220 0 0
	Do.	100 0 0			
		<u>£220 0 0</u>			<u>£220 0 0</u>

Dr.		RENTS.		Cr.	
1912 Dec. 31	To Sundry Creditors	£ s d 50 0 0	1912 Dec. 31	By Revenue Account	£ s d 50 0 0

Dr.		AUDITORS' FEES.		Cr.	
1912 Dec. 31	To Sundry Creditors	£ s d 20 0 0	1912 Dec. 31	By Revenue Account	£ s d 20 0 0

Dr.		DIRECTORS' FEES.		Cr.	
1912 Dec. 31	To Sundry Creditors	£ s d 100 0 0	1912 Dec. 31	By Revenue Account	£ s d 100 0 0

Dr.		GENERAL ESTABLISHMENT CHARGES.		Cr.	
1912 Dec. 31	To Sundry Creditors	£ s d 120 0 0	1912 Dec. 31	By Revenue Account	£ s d 225 0 0
	• Fuel ..	5 0 0			
	• Petty Cash ..	100 0 0			
		£225 0 0			£225 0 0

Dr.		DIVIDENDS AND INTEREST.		Cr.	
1912 Dec. 31	To Revenue Account	£ s d 350 0 0	1912 Dec. 31	By Sundry Debtors	£ s d 350 0 0

Dr.		PRIVATE CONSUMERS.		Cr.	
1912 Dec. 31	To Revenue Account	£ s d 7,000 0 0	1912 Dec. 31	By Sundry Debtors	£ s d 7,000 0 0

Dr.		PUBLIC LIGHTING.		Cr.	
1912 Dec. 31	To Revenue Account	£ s d 1,000 0 0	1912 Dec. 31	By Sundry Debtors	£ s d 1,000 0 0

Dr.		MOTORS.		Cr.	
1912 Dec. 31	To Revenue Account	£ s d 2,000 0 0	1912 Dec. 31	By Sundry Debtors	£ s d 2,000 0 0

Dr.		RENTAL OF METERS.		Cr.	
1912 Dec. 31	To Revenue Account	£ s d 75 0 0	1912 Dec. 31	By Sundry Debtors	£ s d 75 0 0

Dr.		RENTAL OF MOTORS.		Cr.	
1912 Dec. 31	To Revenue Account	£ s d 120 0 0	1912 Dec. 31	By Sundry Debtors	£ s d 120 0 0

Dr.		TEST FEES.		Cr.	
1912 Dec. 31	To Revenue Account	£ s d 2 0 0	1912 Dec. 31	By Sundry Debtors	£ s d 2 0 0

Dr.		SUNDRY SALES.		Cr.	
1912 Dec. 31	To Sundries ..	£ s d 40 0 0	1912 Dec. 31	By Sundry Sales Ledger ..	£ s d 50 0 0
	• Revenue Account	10 0 0			
		£50 0 0			£50 0 0

Dr.		SUNDRY SALES LEDGER.		Cr.	
1912 Dec. 31	To Sundry Sales ..	£ s d 50 0 0			

TRIAL BALANCE, December 31st, 1912.

Account	Total		Balance		Remarks
	Dr.	Cr.	Dr.	Cr.	
Ordinary Share Capital	£	£	£	£	B/S
Preference Share Capital		30,000		30,000	
Sundry Creditors		25,000		25,000	
Net Revenue (1911)	7,000	9,024		2,024	
Ordinary Share Dividend		2,700		2,700	Net Revenue, 1912
Preference Share Dividend	1,800	1,800			
Depreciation and Renewal Fund	1,500	1,500			
Public Lamps		14		14	B/S
Lands	6,000		6,000		Cap.
Buildings	7,540		7,540		
Engines	12,055		12,055		
Accumulators	2,065		2,065		
Other Machinery	3,045		3,045		
Mains	10,185		10,185		
Motors		565		565	
Preliminary Expenses	300		300		B/S
Sundry Debtors	18,547	16,000		2,547	
Deposit	6,000		6,000		
Investments	7,000		7,000		
Petty Cash	120	100		20	
Meters	1,520		1,520		Cap.
Office Furniture and Fittings		50		50	
Instruments	160		160		
Tools	40		40		
Provisional Order	5,000		5,000		
Stock	1,525	667		858	B/S
Wages	1,042	1,042			
Salaries		800		800	
Buildings	15		15		Rev.
Engines	35		35		
Dynamos	27		27		
Other Machinery	20		20		
Apparatus on Consumer's Premises	15		15		
Accumulators	4		4		
Station Lighting	6		6		
Mains	35		35		
Public Lamps	3		3		
Management (Salaries)	500		500		
Generation	2,750		2,750		
Distribution	170		170		B/S
Fuel	1,800	1,705		95	Rev.
Stationery and Printing	40		40		
Law	12		12		
Insurances	2		2		
Rates and Taxes	220		220		
Rents	50		50		
Auditors' Fees	20		20		
Directors' Fees	100		100		
General Establishment Charges	225		225		
Dividends		350		350	
Private Consumers		7,000		7,000	
Public Lighting		1,000		1,000	
Motors		2,000		2,000	
Rental of Meters		75		75	
Rental of Motors		120		120	
Test Fees		2		2	
Sundry Sales	40	50		10	
Sundry Sales Ledger Account	50		50		S. Drs. B/S
General Cash Book Balance			7,923		B/S
Total	£ 100,012	107,935	77,281	77,281	

THE WROXHAM ELECTRIC LIGHTING COMPANY, LIM.
REVENUE ACCOUNT for the year ending 31st December 1912.

GENERATION :-		£ s d		£ s d		By Sale of Current to Private Consumers		£ s d	
To Oil, Waste, Water, & Engine Room Stores	..	1,700	0 0	..	..	" Public Lighting	..	..	..
" Salaries	..	300	0 0	..	..	" Motors	..	..	..
" Wages	..	600	0 0	..	..	" Rental of Meters..	..	75	0 0
" Repairs and Maintenance :-	..	..	..	..	..	" " Motors	..	120	0 0
Buildings	..	15	0 0	..	..	" Test Fees	..	..	..
Engines	..	31	0 0	..	..	" Dividends and Interest..	..	..	..
Diesels	..	27	0 0	..	..	" Profit on Sales	..	..	..
Other Machinery	..	27	0 0	..	..		
Accumulators	..	4	0 0	..	..		
Station Lighting	..	6	0 0	..	..		
Destruction :-	..	..	..	2,857	0 0				
To Salaries	..	70	0 0						
To Wages	..	100	0 0						
" Repairs and Maintenance :-	..	15	0 0						
Apparatus on Consumer's Premises	..	35	0 0						
Mains	..	..	..	220	0 0				
Public Lamps :-	..	..	..	3	0 0				
To Attending and Repairs	..	..	..			
RENTS, RATES AND TAXES :-	..	..	..			
To Rents Payable	..	50	0 0						
" Rates and Taxes	..	220	0 0						
MANAGEMENT EXPENSES :-	..	..	..	270	0 0				
To Directors' Remuneration	..	100	0 0						
" Salaries	..	500	0 0						
" Stationery and Printing	..	40	0 0						
" Legal and Establishment Charges	..	225	0 0						
" Law Charges	..	2	0 0						
" Insurances	..	2	0 0						
" Audit Fees	..	20	0 0						
To Balance, being Net Profit	..	..	..	899	0 0				
				6,308	0 0				
				10,557	0 0				
				£					£
									10 557 0 0

THE WROXHAM ELECTRIC LIGHTING COMPANY, LIM.
BALANCE SHEET, 31st December 1912.

ELECTRIC LIGHTING ACCOUNTS.

Liabilities				Assets			
To SHARE CAPITAL:		£ s d		£ s d		£ s d	
Authorised:—							
5,000 Cumulative Preference Shares of £10 each		.. .. 30,000 0 0		.. ..		48,219 0 0	
5,000 Ordinary Shares of £10 each		.. .. 30,000 0 0		.. ..		7,000 0 0	
		<u>£100,000 0 0</u>		.. ..		933 0 0	
Issued:—				.. .. 2,397 0 0			
2,500 Cumulative Preference Shares of £10 each fully paid		.. ..		.. ..		.. ..
3,000 Ordinary Shares of £10 each fully paid		.. ..		.. ..		.. ..
Sundry Creditors		.. ..		.. ..		.. ..
Depreciation and Renewal Fund		.. ..		.. ..		.. ..
Revenue Account:—		.. ..		.. ..		.. ..
Amount brought forward at January 1st 1912		2,700 0 0		.. ..		.. ..
Net Profit for the year ending December 31st 1912		6,308 0 0		.. ..		.. ..
				9,008 0 0			
				<u>£73,032 0 0</u>		<u>£73,032 0 0</u>	
By Capital Expenditure—Amount expended on							
Works, as per Account				.. ..		
Investments				.. ..		
Shares on hand 31st December 1912				.. ..		
Preliminary Expenses				.. ..		
Sundry Debtors				.. ..		
Bank				.. ..		
On Deposit				6,000 0 0			
" Current Account				7,933 0 0			
Cash in hand				.. ..		
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
						
			</			

Dr.

REVENUE ACCOUNT for the Year ending 31st December 1912.

A.—To Generation of Electricity.		£	s	d	£	s	d
1.	To Coals or other Fuel, including Dues, Carriage, Unloading, Storing, and all Expenses of placing the same on the Works	..	..	..	1,700	0	0
2.	" Oil, Waste, Water, and Engine-room Stores	..	..	..	300	0	0
3.	" Proportion of Salaries of Engineers, Superintendents, and officers certified by the Managing Director, Chairman, or Engineer	..	..	..	150	0	0
4.	" Wages and Gratuities at Generating Stations	..	..	..	600	0	0
5.	" Repairs and Maintenance, as follows:—						
	1. Buildings	£	s	d			
	2. Engines, Boilers	15	0	0			
	3. Dynamos, Exciters, Transformers, Motors, &c.	27	0	0			
	4. Other Machinery, Instruments, and Tools	20	0	0			
	5. Accumulators and Accessories	4	0	0			
	6. Station Lighting	6	0	0			
	Less received for old material				107	0	0
6.	To Special Items	..	..	..	£2,857	0	0
	Carried forward	..	..	..
					£2,857	0	0

No. IV.—continued.

Dr.

REVENUE ACCOUNT—continued.

	Brought forward	£	s	d		£	s	d		Brought forward	£	s	d
B.—To Distribution of Electricity.													
1.	To Proportion of Salaries of Superintendents and Officers, as certified by Managing Director, Chairman, or Engineer .. .. .	..	..	..	..	2857	0	0	..	..	..	..	..
2.	" Wages and Gratuities to Linemen, Fitters, Labourers .. .. .	..	..	..	..	70	0	0	..	..	..	..	..
3.	" Repairs, Maintenance, and Renewals of Meters and all classes, including Materials and laying the same .. .. .	..	..	..	..	100	0	0	..	..	..	..	..
	<i>Less Amounts refunded</i>					35	0	0	..	..	..	..	..
4.	" Repairs, Maintenance, and Renewals of Transformers, Meters, Switches, Fuses, and other Apparatus on Consumers' Premises .. .. .	..	..	..	..	15	0	0	..	..	..	..	..
5.	" Repairs, Maintenance, and Renewals of Apparatus at Distributing Stations .. .. .	..	..	..	..				..	..	..	..	..
C.—To Public Lamps.													
1.	To Attending and Repairs .. .. .	..	..	..	..	3	0	0	..	..	..	..	..
2.	" Renewals of Lamps .. .. .	..	..	..	..				..	..	..	..	..
	Carried forward	..	..	..	..	£3,086	0	0	..	..	..	..	..
						£10,207	0	0					

No. IV.—continued.

REVENUE ACCOUNT—continued.				
Dr.	Cr.			
Brought forward		£ s d	£ s d	£ s d
D.— <i>To Royalties, &c.</i>				
To Royalties, &c., payable for use of Patents or Patent Processes ..			Brought forward	10,207 0 0
E.— <i>To Rents, Rates, and Taxes.</i>				
1. To Rents Payable		50 0 0		
2. " Rates and Taxes		220 0 0		
				270 0 0
F.— <i>To Management Expenses.</i>				
1. To Directors' Remuneration		100 0 0		
2. " Salaries of Managing Engineers, Secretary, Accountant, Clerk, Messengers, as certified by Managing Director, Chairman, or Engineer		500 0 0		
3. " Salaries or Commissions of Collectors				
4. " Stationery and Printing		40 0 0		
5. " General Establishment Charges ..		225 0 0		
6. " Auditors of Company		10 0 0		
7. " Auditor appointed under the provisions of the Order		10 0 0		
				885 0 0
Carried forward		£4,235 0 0	Carried forward	£10,207 0 0

No. IV.—continued.

REVENUE ACCOUNT—continued.				
Dr.	Cr.			
Brought forward		£ s d	£ s d	£ s d
G.— <i>To Law and Parliamentary Charges.</i>				
1. To Law Expenses			Brought forward	10,207 0 0
H.— <i>To Depreciation.</i>				
1. To Depreciation in respect of Leasehold Works		12 0 0		
2. " Depreciation in respect of Buildings				
3. " Depreciation in respect of Plant, Machinery, &c.				
I.— <i>To Special Charges.</i>				
1. To Insurances, Superannuation, &c. ..		2 0 0		
2. " Expenses for Certification of Meters				
Total Expenditure		4,249 0 0		
Balance carried to Net Revenue ..		5,958 0 0		
				£10,207 0 0

No. V.

Dr.

NET REVENUE ACCOUNT.

	£	s	d
1. To Interest on Debentures accrued due to date ..			
2. " Interest on Mortgages and Bonds accrued due to date ..			
3. " Interest on Temporary Loans accrued due to date ..			
4. " Dividend on Preference Stocks ..	1,500	0	0
5. " Balance applicable to Dividend on Ordinary Stock or Shares ..	7,508	0	0
	£9,008	0	0

	£	s	d
1. By Balance from last Account ..	6,000	0	0
<i>Less</i> Dividend paid ..	3,300	0	0
" Amount carried forward ..			
2. " Balance brought from Revenue Account (No. IV.) ..			
3. " Interest on Money at Deposit ..			
4. " Dividends ..			
	£9,008	0	0

No. VI.
Dr.

[illegible]

No. VII.
Dr. DEPRECIATION FUND ACCOUNT.

	£	s	d
L. To Balance	7,000	0	0
1. By Balance from last Account .. .. .	..	..	..
2. " Interest on Investments .. .. .	..	..	..
3. " Amount brought from Revenue Account (<i>see</i> No. IV. H.) .. .. .	..	..	..
(Description of Investments to be specified.)			
	<u>£7,000</u>	<u>0</u>	<u>0</u>

CHAPTER IX.

INCOME TAX:

Electric Lighting Undertaking, and Combined Undertaking, i.e., Tramways and Lighting.

PROCEDURE AND ALLOWANCES.

Cables.—

IN addition to repairs, allowance for depreciation may be granted at the rate of 3 per cent. per annum on the written down value.

Plant and Machinery.—

On all other plant, exclusive of loose tools, meters, and office furniture, depreciation may be allowed at the rate of 5 per cent. per annum on the written down value in addition to the cost of repairs.

Conduits.—

No allowance for depreciation. Annual expenditure on repairs and renewals allowed as working expenses as and when incurred.

Meters, Loose Tools, and Office Furniture.—

No allowance for depreciation, but annual expenditure on repairs and renewals allowed as working expenses as and when incurred.

Where depreciation allowances are granted renewals must be carefully distinguished, and, if charged against revenue, written back for the purpose of the Income Tax Account. Renewals include replacements due to obsolescence.

Readjustments may be made, if necessary, every five years by increasing or decreasing the allowance as the circumstances require.

Written down value means original cost, plus additions, less all allowances actually granted in respect of wear and tear.

In a combined undertaking—i.e., tramways and lighting—the following briefly sets forth the allowances granted for wear and tear as regards tramways.

Life.—

The life of the permanent way is taken as 12, 14, or 16 years, according to the traffic thereon. The classification is based on the average car mileage per mile of track per annum of the financial year preceding the year of assessment, viz. :—

- (1) Not exceeding 50,000 car miles per mile of track, 16 years.
- (2) Over 50,000 and not exceeding 75,000 car miles per mile of track, 14 years.
- (3) Over 75,000 and not exceeding 125,000 car miles per mile of track, 12 years.
- (4) Over 125,000 car miles per mile of track, special consideration.

Where there are special circumstances, such as exceptional gradients and the compulsory use of wood paving, &c., tending to show that the car mileage does not fairly represent the wear and tear of the track, each such case is entitled to special consideration.

Cost of Renewals.—

The cost of renewals, including setts or other paving, but excluding concrete foundations, is to be taken at £4,400 per mile of single track until the general renewal of the track takes place.

Basis of Computation of Depreciation Allowance.—

No allowance is to be made in computing the assessable profits in respect of any expenditure on repairs or maintenance of the permanent way; but the allowance for depreciation is to be computed at such a sum per annum as will in the aggregate over the determined life of the permanent way be equal to the cost of renewal as above fixed, plus the estimated repairs for that period:—

Cost of renewal per mile as above	...	...	£4,400
Add, for example:—			
Estimated cost of repairs at £100 per mile per annum for an undertaking with a life of 16 years	...	...	1,600
			£6,000
Amount to be allowed per annum in lieu of depreciation, 1/16	...	...	£375

The amount to be added in respect of ordinary repairs is determined by taking the actual average expenditure as shown in the accounts of the undertaking for the last three years, or such period less than three years, that the undertaking has been in existence. Repairs under this head are to include renewals of special track work at junctions and cross-overs which occur at frequent intervals.

As the expenditure on repairs is expected to increase as the track begins to wear, in which case the figure to be adopted under this head, which is to be based on past experience, will be unsatisfactory, the amount of such estimate may be revised at the end of every five years, and an adjustment made by increasing or diminishing the allowance as the circumstances require, having regard to the basis of calculation outlined above.

A strict account is to be kept of the annual allowances and of the actual expenditure on repairs and renewals, and at the

end of 10 or 15 years (*i.e.*, the second or third revision), or at such time that the general renewal of the track shall have taken place, the amount to be annually allowed may be reconsidered, and increased or diminished for succeeding years as the ascertained facts shall show to be necessary. In no circumstances, however, are the allowances for previous years to be reopened. All expenditure on extensions and improvements is to be excluded from the working expenses for income-tax purposes, and the necessary additional allowance for depreciation on the lines already indicated (*i.e.*, mileage) may at once be allowed on such expenditure and added to the sum already allowable. The allowance of £4,400 for renewal of permanent way mentioned above is intended to apply to the overhead trolley system. Special arrangements, however, may be made on the lines of the foregoing in the case of the conduit, surface contact, or other system.

Cables.—

Same as for electric lighting undertakings.

Overhead Equipment, *i.e.*, Trolley Wires and Connections.—

No allowance for depreciation is allowed. All expenditure on maintenance and renewals to be charged as working expenses as and when incurred.

Cars and other Rolling Stock.—

Subject to the ensuing clause, expenditure on maintenance and renewals are to be treated as working expenses and allowed in lieu of depreciation.

Depreciation, however, may be allowed in lieu of renewals, where the circumstances justify such an allowance, provided that a strict account is kept of all renewals, and that, if such renewals are charged to Revenue Account, they are shown separately in such account and added back in arriving at the assessable profits.

The allowance in such case is 7 per cent. per annum on the written down value. In any case, the annual expenditure on repairs is to be allowed as a deduction in computing the assessable profits.

General Plant and Machinery.—

All other plant and machinery, including standards, brackets, and workshop tools, but excluding loose implements, office furniture, and small articles which require frequent renewal, should be bulked together, and depreciation may be allowed thereon at the rate of 5 per cent. per annum on the written down value, in addition to the cost of repairs.

In all cases where depreciation allowances are granted a strict account should be kept of the annual expenditure in renewals (and repairs in the case of tramway tracks), including replacements due to obsolescence, and of the amounts allowed for depreciation and obsolescence, and a readjustment, if necessary, may be made at the end of every five years, subject, however, to the special provisions applicable to the permanent way. Where depreciation allowances other than those for the permanent way of tramways are granted, renewals must be carefully distinguished, and, if charged against revenue, they must be notified to the Surveyor in order that they may be added back in arriving at the income-tax liability.

CHAPTER X.

AUDIT.

SOME of the principal duties, excluding those arising in connection with the issue of share capital, debentures, and other similar matters, may be here recited.

In the first instance the auditor should be conversant with the chief features, as far as they relate to or may affect the accounts, of the company's memorandum and articles of association; or in the case of a Parliamentary electric power supply company, of its Act of incorporation, and any subsequent Acts, the company's lighting orders, special agreements for the supply of electrical energy, and any other documents of accounting importance relating to the general business of the company. He should also peruse the Minute Book, and note any resolutions bearing upon accounts.

The Board of Trade audit, as it is generally called, is now performed on behalf of the Board by professional accountants, who have received special instructions upon the scope of the work and the general lines to be pursued. They are paid by the company through the Board of Trade, and they report directly to the latter.

The Board of Trade may be regarded in the light of protectors of, or trustees for, the interests of the local authorities, and the work of the auditor appointed by it is obviously more or less concentrated upon the movements indicated by the

Capital Account, though his labours are by no means necessarily limited to the verification of that account.

The interests and views of the Board of Trade and the company are, however, certainly not identical, and it therefore occurs that what an auditor would pass as the representative of the shareholders he would not recognise as auditor for the Board of Trade, which raises questions of a varied and interesting character which cannot be suitably discussed here. In some cases the Board of Trade auditor acts for the shareholders, and in others the shareholders appoint their own auditor. In no instance, however, should one auditor, or one firm of auditors, be allowed to act in the double capacity indicated.

The auditor should check the arithmetic of the Consumers' Ledger—that is, the additions and extensions—and see that the outstandings at the end of the previous year are correctly brought forward. The postings of the cash entries therein to the debit of the Cash Book should receive the usual attention, any allowances and sets-off will be perceived in some detail in the Journal. As to the detail leading to the Consumers' Ledger, any audit thereof, to be of practical value, will, of course, depend to some extent upon the auditor's technical knowledge of the subject. The practicable starting point is the Meter Reader's Book and the Meter Readings Ledger, the quarterly accounts being prepared from the latter record, and agreeing with the debit entries made quarterly in the Consumers' Ledger.

Sometimes what may be regarded as special accounts are rendered for supplies under special agreements, and the auditor should test these as far as possible in conjunction with such agreements. In some cases, according to routine circumstances, he will not find the debits for these particular items entered in the Consumers' Ledger, they being treated directly in the Journal.

The accuracy of the outstanding debtors in consumers' accounts, which are stated separately in a single sum in the Balance Sheet, may be tested in the following manner :—

- £
- (1) Outstandings at end of previous year brought forward
 - (2) Current sold during the year as disclosed by debits on Consumers' Ledger for the quarters of March, June, September, and December
 - (3) Current sold under special agreements not included in the preceding paragraph _____

Deduct—

Cash received during the year	...	...
Discounts	...	...
Allowances	...	...
Bad Debts written off	...	...
Other Contras	...	...

Amount of debtors on Consumers' Account at end of year of audit

The auditor will vouch the Cash Book payments in the ordinary way, check the additions, compare the receipts and payments in the Bank Pass Book with those appearing in the Cash Book, check the Reconciliation Account, if any be necessary, and obtain bank certificate for balance at the date of the accounts, as well as for any sums in Deposit, Dividend, or Debenture Interest Account.

Stores Purchase and Allocations.—

The auditor will check the postings from this book to the Personal and Impersonal Accounts, vouch the entries in the former in the usual way, not omitting the necessary additions and extensions. The allocations of stores issued and expenses incurred are usually made on suitably designed monthly sheets,

and these are certified by the managing engineer, checked, and journalised. The auditor should check the arithmetic of these sheets, and vouch the Journal entries with the latter, he, in the first place, vouching the allocation sheets with the certified and allocated invoices and accounts. He should be supplied with reasonably detailed statements of the capital allocations, which, if not fairly obvious, should embrace in brief the reasons for capitalisation. Where machinery or other asset in the Capital Account is sold or scrapped, he will ascertain the original sum at which it was debited in the Capital Account, the sum or sums (if any) that have been appropriated or charged in respect thereof on account of depreciation, and deal with the difference (if any).

Steps should be taken to ensure that all accounts and invoices for the period under review have been properly included, and that they are fully certified and allocated by the managing engineer, or other equally responsible person.

Wages and Salaries—Allocations.

Our observations under the preceding heading apply in the main to wages and salaries allocations.

The auditor will note whether provision has been made for any accrued wages and salaries.

Petty Cash.—

Verify payments as far as possible. Check allocations and additions, check postings, and verify balance (if any).

Dividend and Debentures or Debenture Interest Accounts.—

These accounts will be ticked off in the Pass Books with the returned paid warrants, and the necessary entries made in the books to agree the accounts therein with the Pass Book records, the balances on hand (if any) representing money at the bank in the special accounts, which will be equationed by sundry

creditors on Dividend or Debenture Interest Account, or, briefly, unrepresented warrants.

Stocks of Stores, Fuel, &c.—

A certified statement of stocks of stores and other consumable materials, including loose tools, will be submitted in detail. The auditor should check the additions and calculations, note the prices, and see that the tools are adequately depreciated. An efficient system should be installed, if one is not already in force, of dealing with the reception, custody, and issue of stores and materials.

Free Wiring.—

The capital expenditure on free wiring is included separately in the Balance Sheet, and does not appear in the Capital Account. The auditor should note from time to time the number of persons or premises free wired, and make comparisons. There is, of course, no obligation upon the company to depreciate this item, with the result that the expenditure thereon is not, to a varying extent, represented by available assets.

Accounts for wiring should receive careful attention, particularly those arising under the Electric Lighting Acts; and the methodical collection and checking of revenue derived from the use of slot meters, which form, of course, a matter for the management of the undertaking, should not be passed unobserved.

Accrued Charges.—

It is important to the auditor to see that ascertained provision is made for all accrued and accrued due charges, such as debenture interest, and that the necessary adjustments of certain Revenue Accounts, as, for example, Insurance, are effected, so that the accounts of each year may bear their proper proportion.

Hire-Purchase.—

He will see that in any hire-purchase transactions credit is only taken for the profit on each instalment falling within the period of the accounts, that the proper instalments have been debited as they fell due, and that a reserve is made for doubtful debts.

Investments.—

Vouch with production of certificates, bonds, and other documents; note values at which the investments appear in the books, and contrast with market values, if any; also observe whether they are dividend or interest bearing. See Board's authority.

With regard to depreciation from a company point of view, electric lighting undertakings are in a somewhat unusual position, because of the purchasing powers of the local authorities. This position, however, in no way modifies the necessity for making substantial and efficient provision for renewals, obsolescence, and other kindred factors. In practice, the amount of the periodical provision is not infrequently governed more or less by dividend considerations.

The foregoing is only an imperfect sketch at best. Much might be added to it; but what has been stated will probably suffice as an introduction to this special branch of our subject.

CHAPTER XI.

POWER SUPPLY COMPANIES.

WITHOUT discussing events prior to 1900, it was in the Session of that year that a number of Electric Power Supply Bills for the establishment of generating stations and the supply of electrical energy in bulk over large areas were promoted, which were followed at different periods by several others, and, as a result, we have as some of the principal electric power supply companies incorporated by special Acts of Parliament the Yorkshire Electric Power Company, incorporated by the Yorkshire Electric Power Act, 1901; the Lancashire Electric Power Company, incorporated 6th August 1900; the Cornwall Electric Power Company, incorporated 1902; the Kent Electric Power Company, 1902; the South Wales Electrical Power Distribution Company, 1900; the Shropshire, Worcestershire & Staffordshire Electric Power Company, 1903; Derbyshire and Nottinghamshire Electric Power Company, incorporated 1901; and others.

The *raison d'être* for the creation of electric power supply companies is ascribed to the expediency or necessity, in the interest of economical production, of generating electricity on convenient sites on a large scale, and transmitting it to the points where it is required for distribution in retail, the idea being that the power companies would become the wholesale purveyors, and the undertakers under Electric Lighting Orders (or distribution companies) would purchase the current in bulk, and supply it in detail to individual consumers. It was upon

this principle that the first group of power supply companies obtained their Acts, the preambles of which define the objects intended—viz., to establish stations for generating electrical power, to supply electrical energy in bulk to authorised distributors within certain districts therein defined in certain counties and so on.

There was a good deal of opposition to the grant of these powers by reason of vested interests; but the ostensible advantage to the community at large of cheapening the cost of electrical energy resulted in the passing of Acts of Parliament affecting large districts of the country, and in some cases the original method of supply to sometimes very small areas by local generating and distributing works, which has been superseded by the conversion of the works into practically merely transforming and distributing stations.

Since the accession of power supply companies it is sometimes stated that there has arisen a tendency on their part to encroach upon the business of distribution, their object being really to carry on a wholesale and retail supply.

To accomplish this object, supplementary powers have been obtained to enable them to take over or to work electric lighting orders, and thus entirely to change the original scheme of supplying only to authorised distributors in bulk.

Summarising the occurrence of events, we have the creation of power supply companies—

- (a) To establish generating stations and supply electrical energy in bulk over large areas to authorised undertakers.
- (b) The acquisition of powers entitling them to supply direct to any person for power purposes, and for lighting any premises on some part of which the power is utilised.

- (c) Extension of areas.
- (d) The supersession of the limitation of supply in bulk to authorised undertakers only by the acquisition of extensive powers.
- (e) The acquisition of powers for the transfer of undertakings of local authorities and others.

Contrasted with the ordinary lighting company working in a comparatively small district, some of the advantages of power supply companies operating over large areas may be recited.

- (a) Large area for development.
- (b) Station economically situated, possibly where water is available for condensing, means economy in cost and handling of fuel.
- (c) The whole of the plant installed likely to be utilised to the best advantage, the attainment of a higher load factor follows.
- (d) Large and regular output reflects itself favourably in running, maintenance, and management expenses per unit sold. Low cost should mean cheap supply to the consumer, who should be able to secure a supply of electrical energy on cheaper terms from a large company than from a small company with a small station operating in a restricted area at comparatively high cost.
- (e) If the works be erected in the country we have such considerations as the difference between town and country rents, rates, and taxes; land for possible extension, &c.

A good diversity factor is only possible by combining with the supply of energy for lighting to every class of consumer a supply for as many other purposes as possible, inasmuch as

in large areas, consequent upon the incidence of demand in different localities, the diversity factor is thereby improved.

These power supply companies are, of course, governed by the special Act creating them, and any supplemental Acts which they may obtain.

The special Act commonly provides that the Companies Clauses Consolidation Act, 1845, Part I (relating to cancellation and surrender of shares), and Part III (relating to debenture stock), of the Companies Clauses Act, 1863, and the Lands Clauses Acts, are, so far as applicable, and except where expressly varied by the special Act, incorporated with and form part of the special Act.

The special Act also indicates the sections of the Electric Lighting Acts, 1882 and 1888, and the Electric Lighting (Clauses) Act, 1899, which are inapplicable to the company, the provisions of these Acts, with the exception of the clauses named, being incorporated with and forming part of the special Act.

The preamble of the special Act, after *inter alia* defining the objects of the promoters, proceeds to state that certain persons (naming them), and all other persons who have already subscribed to or shall hereafter become proprietors in the undertaking, and their executors, administrators, successors, and assigns respectively, shall be and are hereby united in a company for the purpose of putting into execution the powers and provisions of this Act, and for these purposes shall be and are hereby incorporated by the name of The Power Supply Company, and by that name shall be a body corporate, with perpetual succession and a common seal, and with power to purchase, take, hold, and dispose of land and other property for the purposes of this Act.

Some of the principal clauses in and common to the special Act and the Companies Clauses Act may be stated :—

When not less than a specified sum has been subscribed under contract binding parties thereto for the payment of the several sums in such portions of capital, it shall be lawful for the company to put in force the powers of the special Act in relation to the compulsory taking of land.

The first ordinary meeting of the company shall be held within six months after the passing of the Act.

The costs, charges, and expenses preliminary to and of and incidental to the preparation of and applying for and the obtaining and passing of this Act, or otherwise in relation thereto, shall be paid by the company.

The following is a common clause dealing with the relation of price and dividend :—

“ Except as hereinafter provided, the dividend payable by the company, on the capital of the company, in any year shall not exceed £ . . . in respect of every £100 paid up of such capital : Provided that in respect of any year during the whole of which the prices actually charged by them shall have been at the rate of $1\frac{1}{4}$ per cent. or more below the maximum price stated in the schedule to this Act, such dividend may be increased in the ratio of . . . shillings per cent. in respect of every complete $1\frac{1}{4}$ per cent. by which the prices so charged by the company shall have been below such maximum prices ; and provided that the company may in addition to such dividends make good any deficiency in any previous dividend which shall have fallen below the said yearly rate of . . . per cent.

“ The qualification of a director is usually described as the possession in his own right of not less than a specified number of shares. It is, therefore, necessary for the auditor to see

that the directors are properly qualified, and that they are not the nominees of another company holding blank signed transfers; except where by the special Act auditors shall be directed to be appointed otherwise than by the company, the company shall at the first ordinary meeting after the passing of the special Act elect the prescribed number of auditors; and if no number is prescribed, two auditors in like manner as is provided for the election of directors, and at the first ordinary meeting of the company in each year thereafter the company shall in like manner elect an auditor to supply the place of the auditors then retiring from office, according to the provision hereinafter contained, and every auditor elected as hereinbefore provided, being neither removed nor disqualified, nor having resigned, shall continue to be an auditor until another is elected in his stead."

When the special Act prescribes no other qualification every auditor must have at least one share in the undertaking, and he cannot hold any office in the company, nor except as a shareholder must he be interested in any other manner in the concerns of the company.

The directors shall cause full and true accounts to be kept of all sums of money received or expended on account of the company by the directors and all persons employed by or under them, and of the matters and things for which such sums of money shall have been received or disbursed and paid.

The books of the company shall be balanced at the prescribed periods, and, if no periods be prescribed, fourteen days at least before each ordinary meeting, and forthwith on the books being so balanced an exact Balance Sheet shall be made up, which shall exhibit a true statement of the capital, stock, credits, and property of every description belonging to the company, and the debts due by the company at the date of making such

Balance Sheet, and a distinct view of the profit or loss which shall have arisen on the transactions of the company in the course of the preceding half-year, and previously to each ordinary meeting such Balance Sheet shall be examined by the directors or any three of their number, and shall be signed by the chairman or deputy chairman of the directors. The books so balanced, together with such Balance Sheet as aforesaid, shall for the prescribed periods, and if no periods be prescribed, for fourteen days previous to each ordinary meeting and for one month thereafter, be open for the inspection of the shareholders at the principal office or place of business of the company, but the shareholders shall not be entitled at any time, except during the periods aforesaid, to demand the inspection of such books unless in virtue of a written order signed by three of the directors.

The directors shall produce to the shareholders assembled at such ordinary meeting the said Balance Sheet applicable to the period immediately preceding such meeting, together with the report of the creditors thereon as hereinbefore provided.

The directors shall appoint a bookkeeper to enter the accounts in books to be provided for the purpose, and every such bookkeeper shall permit any shareholder to inspect such books, and to take copies or extracts therefrom, at any reasonable time during the prescribed periods, and if no period be prescribed during one fortnight before and one month after every ordinary meeting, and if he fail to permit any such shareholders to inspect such books or take copies or extracts therefrom during the periods aforesaid he shall forfeit to such shareholder for every such offence a sum not exceeding £5.

The account books of the company are to be "open to the inspection of the respective mortgagees and bond creditors thereof, with liberty to take extracts without fee or reward."

"Previously to every ordinary meeting of the company at which a dividend is intended to be declared the directors shall cause a scheme to be prepared showing the profits, if any, of the company for the period current since the preceding ordinary meeting at which a dividend was declared, and apportioning the same or so much thereof as they may consider applicable to the purposes of dividend among the shareholders, according to the shares held by them respectively, the amount paid thereon, and the periods during which the same may have been paid, and shall exhibit such scheme at such ordinary meeting, and at such meeting the dividend may be declared according to such scheme."

"No dividend shall be paid in respect of any share until all calls then due in respect of that and every other share held by the person to whom such dividend may be payable shall have been paid."

The directors shall deliver to such auditors the half-yearly or other periodical accounts and Balance Sheet fourteen days at the least before the ensuing ordinary meeting, and the same are required to be produced to the shareholders as hereinafter provided.

It shall be the duty of such auditors to receive from the directors the half-yearly or other periodical accounts and Balance Sheet required to be presented to the shareholders and to examine the same.

It shall be lawful for the auditors to employ such accountants or other persons as they may think proper at the expense of the company, and they shall either make a special report on the said accounts or simply confirm the same, and such report or confirmation shall be read, together with the report of the directors, at the ordinary meeting.

If any of the directors at any time subsequently to election accept or continue to hold any other office or place of trust or profit under the company, or be either directly or indirectly concerned in any contract with the company, or participate in any manner in the profits of any work to be done for the company, or if such director at any time ceases to be a holder of the prescribed number of shares in the company, then in any of the cases aforesaid the office of such director shall become vacant and thenceforth he shall cease from voting or acting as a director. Provided "the company shall provide a book to be called the Shareholders' Address Book, in which the secretary shall from time to time enter in alphabetical order the corporate names and places of business of the several shareholders of the company being corporations, and the summaries of the several other shareholders, with the respective Christian names, places of abode, and descriptions, so far as the same shall be known to the company and every shareholder, or if such shareholder be a corporation the clerk or agent of such corporation may at all convenient times peruse such book gratis, and may require a copy thereof, or of any part thereof, and for every hundred words so required to be copied the company may demand a sum not exceeding sixpence."

Section 15 of the 1845 Act also provides for the keeping of a Register of Transfers, and, if no sum be prescribed for, a sum not exceeding 2s. 6d. for each transfer.

Section 45 provides for the keeping of a Register of Mortgages and Bonds, and 46 and 47 for the transfer similar to Section 15 in regard to shares.

One of the sections (9) of the Electric Lighting Act, 1882, which is applicable, provides that the undertakers shall on or before the 25th day of March in every year fill up an annual statement of accounts of the undertaking made up to the 31st of December then next preceding, and such statement shall be in

	Expendi- ture up to 31 Dec. 19	Expendi- ture during the year	Total Ex- penditure to 31 Dec. 19	Receipts up to 31 Dec. 19	Received during year	Total Receipts to 31 Dec. 19
	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d
1. To Lands, including Law Charges incidental to acquisition						
2. " Buildings						
3. " Motors						
4. " Accumulators at & Distributing Stations laying the mains						
5. " Mains, including cost of Transformers, Motors, &c.						
6. " Meters and Fees for certifying under the Act Electrical Instruments, &c.						
7. " General Stores (means lamps, &c.) Patents or Patent rights						
8. " Total Expenditure of Works						
9. " To Cost of Special Act						
10. " Special Items (to be spec- ified)						
Total Expenditure						
To Balance of Capital unexpended						

£

By Ordinary Shares of £
Preference " of £
Debt Stock " of £
Amounts received in anti-
cipation of calls

	£ s d	£ s d	£ s d	£ s d	£ s d
A.—To Generation of Electricity.					
1. To Coal or other Fuel, including Dues, Charges, Unloading, Storing, and all expenses of placing the same in the Works					
2. " Oil, Waste, Water, and Engine-room Stores					
3. " Proportion of Salaries of Engineers, Superintendents, and Officers, as certified by the Managing Director, Chairman, or Engineer					
4. " Wages and Gratuities at Generating Stations					
5. " Repairs and Maintenance, as follows :—					
1. Buildings					
2. Engines, Boilers					
3. Dynamos, Motors, Trans- formers, Motors, &c.					
4. Other Machinery, Instru- ments, and Tools					
5. Accumulators and Accessories					
Less received for old material					
6. To Special Items (to be specified)					
Carried forward					

1. By Sale of Current under Contracts

2. " Sale of Current per Meter at
per B.T.U.

3. " Rental of Meters and other Apparatus
on Consumers' Premises

4. " Royalties, Licences, &c.

5. " Rents Receivable

6. " Transfer Fees

7. " Other Items (to be specified)

Carried forward

		Cr.	
£	s d	£	s d
Brought forward		Brought forward	
B.—To Distribution of Electricity.			
1. To Proportion of Salaries of Superintendents and Officers, as certified by Managing Director, Chairman, or Engineer			
2. " Wages and Gratuities to Linemen, Fitters, Labourers			
3. " Repairs, Maintenance, and Renewals of Mains of all classes, including Materials and laying the same..			
Less Amounts refunded			
4. " Repairs, Maintenance, and Renewals of Transformers, Meters, and other Apparatus on Consumers' Premises			
5. " Repairs, Maintenance, and Renewals of Apparatus at Distributing Stations			
C.—To Royalties, &c.			
To Royalties, payable for use of Patents or Patent Processes			
D.—To Rents, Rates, and Taxes.			
1. To Rents Payable			
2. " Rates and Taxes			
Carried forward		Carried forward.. ..	

		Cr.	
£	s d	£	s d
Brought forward		Brought forward	
E.—To Management Expenses.			
1. To Directors' Remuneration			
2. " Salaries of Managing Engineers, Secretaries, Accountants, Clerks, Messengers, as certified by Managing Director, Chairman, or Engineer			
3. " Stationery and Printing			
4. " General Establishment Charges			
5. " Auditors of Company			
7. " Auditors appointed under the provisions of the Act			
F.—To Law and Parliamentary Charges.			
To Law Expenses			
G.—To Depreciation.			
1. To Depreciation in respect of Leasehold			
2. " Depreciation in respect of Buildings..			
3. " Depreciation in respect of Plant, Machinery, &c.			
H.—To Special Charges.			
1. To Insurances, Superannuation, &c. ..			
2. " Expenses for Certification of Meters..			
Total Expenditure			
Balance to Net Revenue			

Dr.

NET REVENUE ACCOUNT.

Dr.		NET REVENUE ACCOUNT.	Cr.
-----	--	-----------------------------	-----

	£ s d	
1. To Interest on Debentures accrued due date.. .. .		£ s d
2. " Interest on Mortgages and Bonds accrued up to date		" "
3. " Interest on Temporary Loans accrued due to date		(t) Dividend Paid
4. " Dividend on Preference Stock		(2) Amount carried to Reserve Fund
5. Balance applicable to Dividend on Ordinary Stock or Shares		(3) Amount written off Prelim. Expenses
		2. By Balance brought from Renewal Account (No. IV.)
		3. " Interest on Money at Deposit
		£

Dr.

RESERVE FUND ACCOUNT.

	£	s	d
1. Amount paid out for
2. Amount of Balance to next Account
1. By Balance brought from last Account
2. " Amount brought from Net Revenue Account
3. " By Interest on Amount Invested
(Description of Investments to be specified)			
	£		

Dr.

DEPRECIATION FUND ACCOUNT.

£ s d					£ s d
To Balance ..	..	..	..	..	1. By Balance from last Account
					2. " Amount brought from Revenue Account (See No. IV C)..
					3. " Interest on Investments
					(Description of Investments to be specified)
					£

Dr.

GENERAL BALANCE SHEET.

[illegible]

(Certificate by Company's Auditors.)

Chairman.
Manager and Secretary.

No. IX. STATEMENT OF ELECTRICITY GENERATED AND SOLD ACCOUNT.

Quantity generated in B. T. Units	Quantity Sold		Quantity used in Works	Total Quantity accounted for	Quantity not accounted for	Total maximum supply demanded
	By Contract	Private Consumers by Meter Total Sold				

CHAPTER XII. COMPANY BOOKS.

In Electric Lighting Companies formed under the Companies Acts, 1862-1900, the books and forms in use for the record of share capital, transfers, and other matters incidental to companies governed by the Companies Acts, are of the usual design.

Subscription List, in Application and Allotment Book.—
Form (*see* next page).

APPLICATIONS AND ALLOTMENTS.

No.	Name	Description	Address	No. of Shares applied for	Amount paid on application	Folio	Regret	No. of Allotment Letter	Distinctive Nos.	Amount due on Allotment. Due...	Date Paid	Amount Paid	Folio	Instalment of £ : : per Share. Due...	Date Paid	Amount Paid	Folio	Brokers	Remarks
					£ s d		No. Amount		From To	£ s d		£ s d		£ s d		£ s d			

NOTE.—Debit the Bank and Credit Application Account with the amount received on application.
Credit Cash and Debit Application Account with the amount returned.
Transfer Balance to Credit of Share Capital Account.
Debit Allotment Account with the amount due on Allotment and Credit Share Capital Account.
Debit the Bank with the Cash received and Credit Allotment Account, similarly with Calls.
Any outstanding Balance on Allotment or Calls Account represents amount unpaid on Share Capital issued and called-up.

TRANSFER REGISTER.

Date Lodged	No. of Transfer	Date of Transfer	No. of Certificate received	Date of Registration	Share Ledger Folio	Name	Occu- pation	Address	No. of Shares	Distinctive Nos.	Total Amount paid up per Share	Amount	Nos. of Certificates Issued	Share Ledger Folio	Transferee Name Occu- pation Address	Consideration	Transfer Fee
										From To	£ s d	£ s d	Transferor				£ s d
													Transferee				

SHAREHOLDERS' LEDGER.

ACQUIRED										TRANSFERRED								BALANCE			
Date	Folio	No. of Shares	Distinctive Nos.		Amount paid per Share	Amount	Date	Folio	To whom Transferred	No. of Shares	Distinctive Nos.		Amount paid per Share	Amount	Transferor's Share Ledger Folio	Date	No.	Distinctive Nos.		Amount paid per Share	Amount
			From	To							From	To									
					£ s d	£ s d							£ s d	£ s d						£ s d	£ s d

SEAL BOOK.

Date of Sealing	Date of Minute	Particulars of Document Sealed	Initials of Directors

REGISTER OF AGREEMENTS, CONVEYANCES, &c.

No.	Date	From or Between	To	As to	Remarks

DIVIDEND LIST.

For Binding	Warrant No.	Share Ledger Folio	Surname	Initials	No. of Shares	Of £... each paid	Gross Amount	Less Tax @...	Net Amount of Warrant	Date Paid	Remarks
							£ s d	£ s d	£ s d		

NOTE.—For the total of Column 10 a cheque is drawn and paid into the Dividend Account at the Bank, transferring to that account the amount required for the dividend from Current or other Account. Against this Dividend Account the Bank pay the Dividend Warrants, particulars of the latter being supplied to them when issued. The Dividend Account is credited with the total amount of dividend, including income tax, the total amount of tax deducted being debited to Dividend Account and credited to Income Tax Account.

ANNUAL SUMMARY.

Clause 19 of the Companies Act, 1900, which reads as follows, should be noted :—

The summary mentioned in Section 26 of the Companies Act, 1862, shall be so framed as to distinguish between Shares issued for cash and Shares issued otherwise than for cash or only partly for cash, and shall, in addition to the particulars required by that section to be specified, also specify :—

- (a) The total amount of debt due from the Company in respect of all mortgages and charges which require registration under this Act, or which would require such registration if created after the commencement of this Act; and
- (b) The names and addresses of the persons who are the Directors of the Company at the date of the summary.

The list and summary mentioned in the said Section 26 must be signed by the Manager or by the Secretary of the Company.

INSURANCES.

The usual forms of insurance effected are :—

- (1) Fidelity at, say, 7s. 6d. to 10s. per cent.
- (2) Boiler, 30s. per boiler; Boiler and Superheater, 40s.
- (3) Workmen's Compensation, say, 7s. 6d. per cent.
- (4) Fire Insurance.

APPENDIX.**FACTORY AND WORKSHOP ACT (1901).**

SINCE January 1st 1902 any premises in which electrical energy is generated or transformed for the purpose of supply by way of trade have come under the above Act. *Inter alia* certain notices must be posted up, in accordance with Section 128 of the Act, which reads as follows :—

There shall be affixed at the entrance of every factory and workshop, and in such other parts thereof as an Inspector for the time being directs, and be constantly kept so affixed in the prescribed form, and in such position as to be easily read by the persons employed in the factory or workshop :—

- (a) The prescribed Abstract of this Act; and
- (b) A Notice of the Name and Address of the prescribed Inspector; and
- (c) A Notice of the Name and Address of the Certifying Surgeon for the district; and
- (d) A Notice of the Clock (if any) by which the period of employment and times for meals in the factory or workshop are regulated; and
- (e) Every Notice and Document required by this Act to be affixed in the factory or workshop.

In the event of a contravention of this section in a factory or workshop, the occupier of the factory or workshop shall be liable to a fine not exceeding 40s.

The Abstract required is the "Non-Textile Factories Abstract" (Form 2). Copies of this Abstract, arranged so that the addresses required under (b), (c), and (d) can be inserted, may be obtained from Messrs. Eyre & Spottiswoode, East Harding Street, Fleet Street, E.C.

In the event of boy switch-board attendants of 16 years of age and upwards (to 18) being employed at night in virtue of any "special exception," which may be granted under Section 54, Subsection 4, a special notice should be posted up, in accordance with Section 60.

It is also necessary, under Section 129, for all "Electrical Stations" to keep a "General Register" (Form 37), copies of which may be obtained from Messrs. Eyre & Spottiswoode.

The premises of a tramway company where electrical energy is generated or transformed for purposes of traction on the tramway do not come under the Factory Acts.

The fitting shops, armature, and other shops of an electrical trading company are workshops within the meaning of the Act.

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Accountants Sebra
Electric Lighting

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Electric System

JAN 26 1928
2 weeks

H. F. F. F. F.

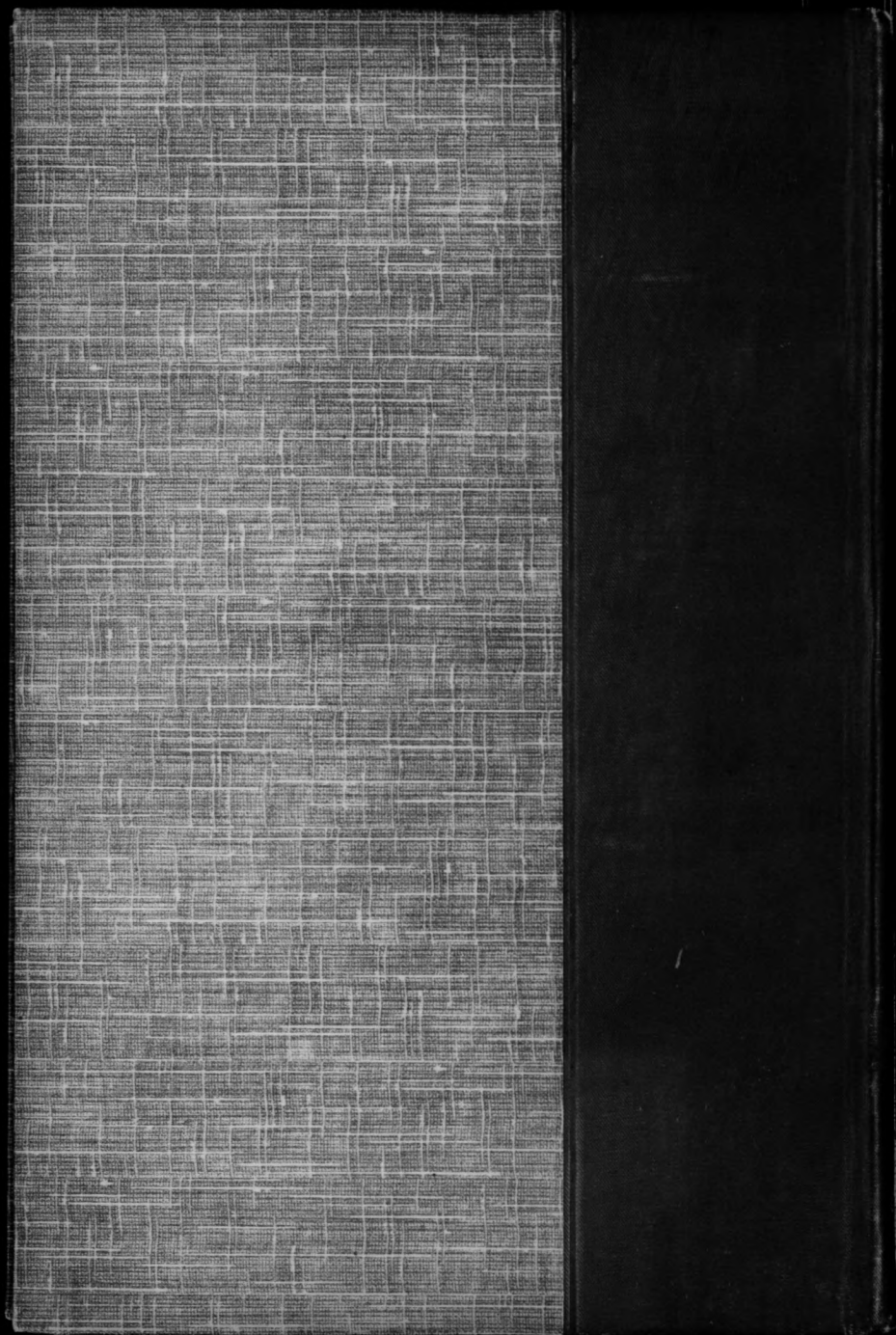
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